SERVICE MANUAL

Compact Disc Player

D-102

Contents

Specifications 2
Before Use 2
Parts Locations and Disassembly Instructions . . . . . 3 to 5
Adjustment Locations 6
Adjustment Procedures. . . . . 6 to 7
Block Diagram 8
Schematic Diagram . . . . . 9 to 11
Parts Layout on P.C. Boards and Wiring Diagram. . . . . 12 to 14
Electrical Parts List . . . . . 15 to 19
Cabinet Assembly Parts List 20
Exploded View (Cabinet) . . . . . 21 to 22
Exploded View (Mechanism) . . . . . 23 to 24
Mechanism Assembly Parts List 25
Packing Assembly Parts List 26
Packing Method View. 26
Semi-Conductor Lead Identifications . . . . . 27 to 31

Specifications

Type	Compact Disc player with optical pickup
Quantization	16 bit linear
Channels	2 channels (Stereo)
Frequency Response	20 Hz – 20 kHz ±0.5 dB
Dynamic Range	Over 90 dB
Total Harmonic Distortion	0.005% (1 kHz)
Channel Separation	Over 36 dB
Wow and Flutter	Unmeasurable
Output	2 Volts
Pickup	Semiconductor laser
Track Search	By track number
Power Supply	120V, 60 Hz (UC/UQ) 220V, 50 Hz (EK)
Power Consumption	14 Watts
Dimensions	438(W) x 82(H) x 309(D) mm
Weight	4.4 kg
Accessories	Connection cables (Pin plugs) x 1 Remote control unit x 1 AC Cord x 1 (EK)

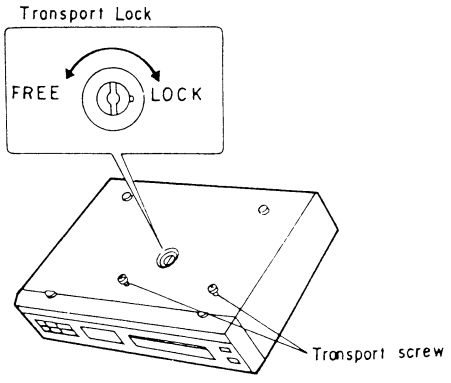
Due to product improvement, designs and specifications are subject to change.

Before Use

1. Remove two transport screws (Red) (Turn 5 or 6 rounds.) until they are fully released (The screws can not be taken away out).
2. Release the transport lock by turning counterclockwise until it stops. (It turn half a turn.)

   Note: When transporting the unit, take a disc away and close the disc tray by pressing the Open/Close button. Turn the Power off and fasten with transport screws and lock.

When transfer screws and lock are fastened, normal operations are not available.



Parts Locations and Disassembly Instructions

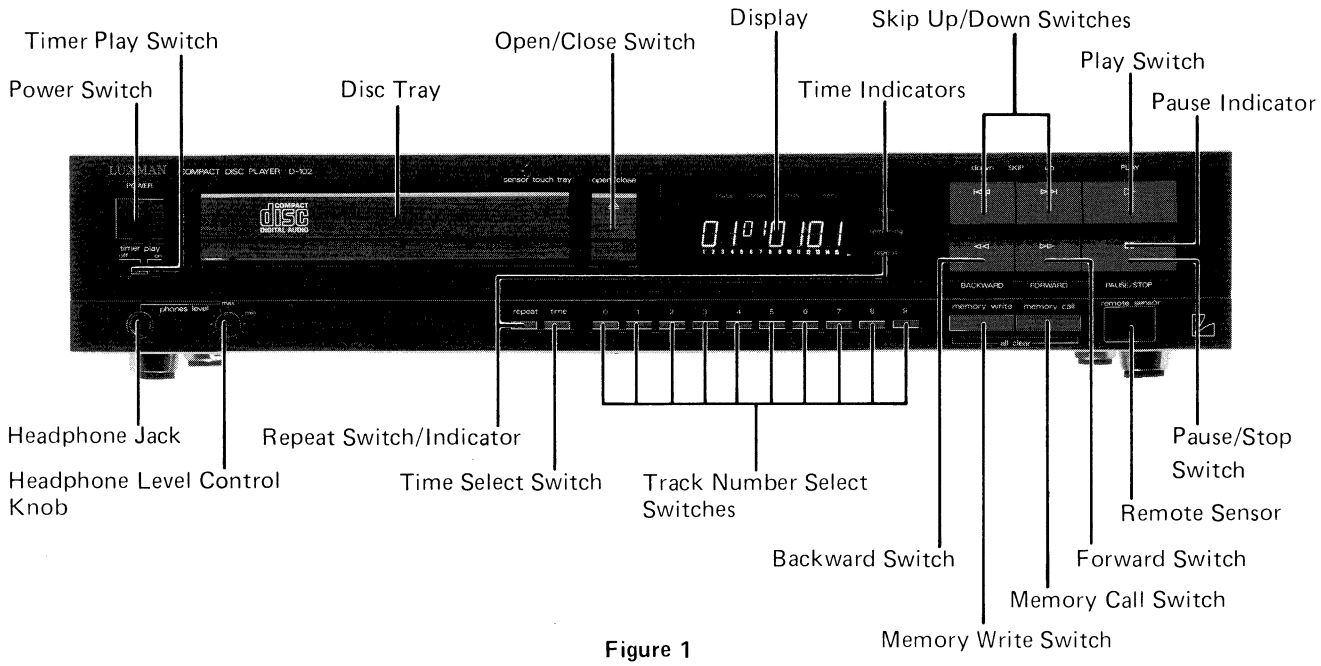


Figure 1

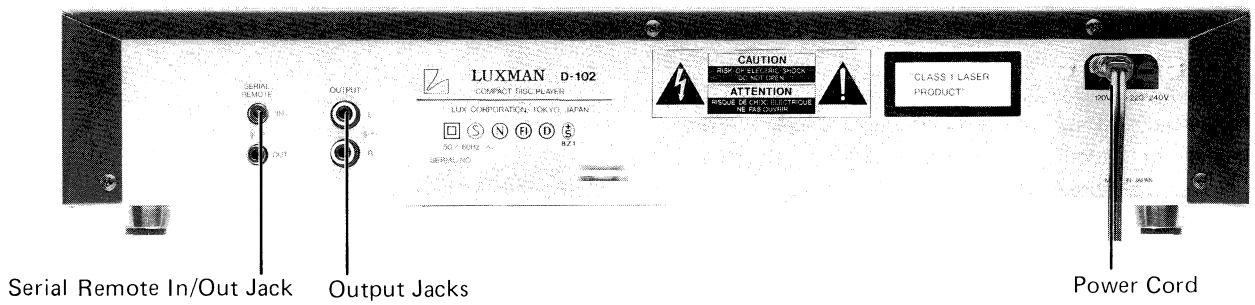


Figure 2

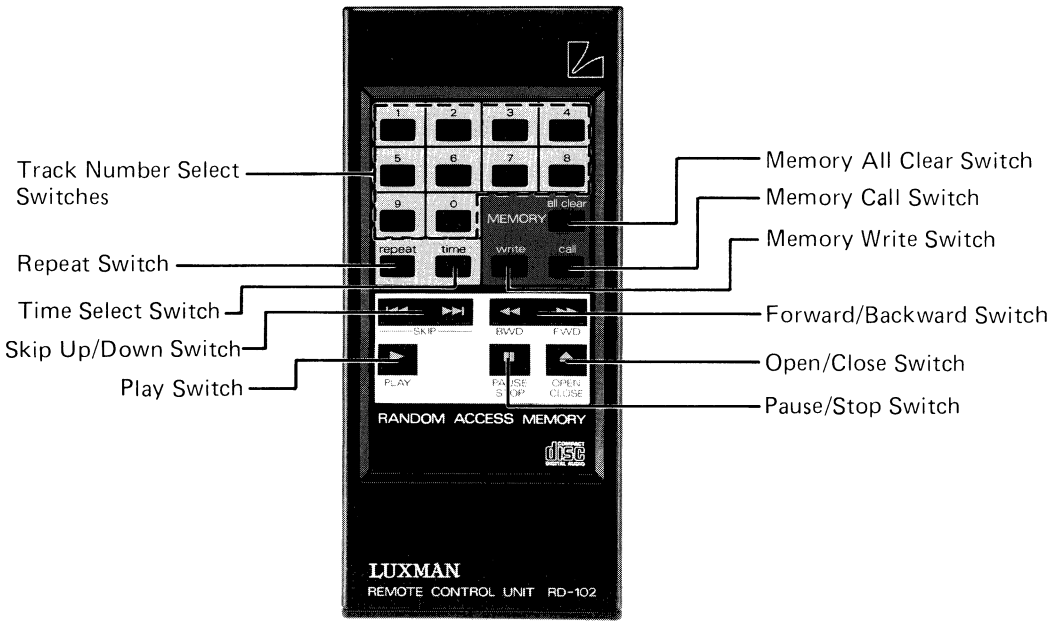


Figure 3

1. Removal of Top Cover

(1) Remove eight screws marked " ○ " as shown in Figures 4 and 5-1.

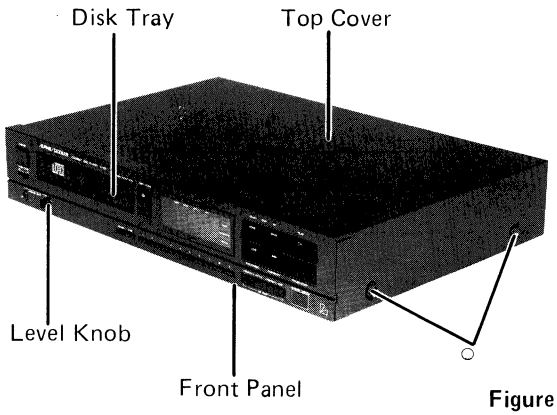


Figure 4

2. Removal of Tray Panel

(1) Open the disc tray.

(2) Remove two hooks ⓐ as shown in Figure 6.

3. Removal of Front Panel

(1) After removal of the tray panel, remove the level knob as shown in Figure 4.

(2) Remove five screws marked " △ " as shown in Figures 6 and 7.

(3) Then remove display P.C. Board, timer play P.C. Board and phone level P.C. Board with the front panel.

(4) Disconnect all wires from these P.C. Boards.

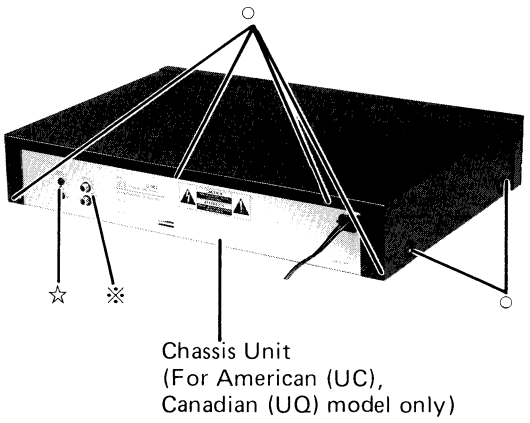


Figure 5-1

4. Removal of Display P.C. Board

(1) After removal of the front panel, remove seven screws marked " □ " as shown in Figure 8.

(2) Remove hooks ⓑ as shown in Figure 8.

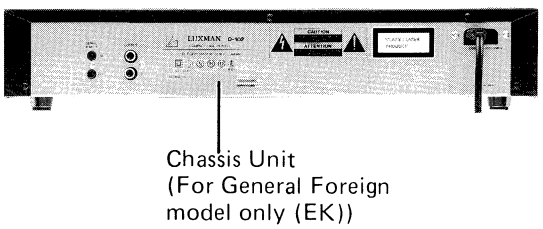


Figure 5-2

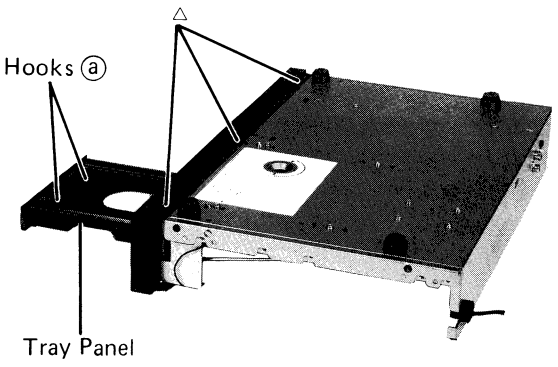


Figure 6

5. Removal of Phone Level P.C. Board and Timer Play P.C. Board

(1) After removal of the front panel, remove one screw marked " ● " as shown in Figure 8.
(2) Remove two nuts as shown in Figure 9.
(3) Thereby remove the Phone Level P.C. Board.
(4) Remove two screws marked " ▲ " as shown in Figure 9.
(5) Thereby remove the Timer Play P.C. Board.

6. Removal of Mechanism Assembly

(1) After removal of the front panel, remove five screws marked " ■ " as shown in Figure 7.

7. Removal of Main P.C. Board

(1) After removal of the mechanism assembly, remove three screws marked " ※ " as shown in Figures 5-1 and 7.
(2) Disconnect all wires from the P.C. Board

8. Removal of Serial Remote P.C. Board

(1) Remove one screw marked " ☆ " as shown in Figure 5-1.
(2) Disconnect all wires from the P.C. Board.

9. Removal of Terminal Power P.C. Board

(1) After removal of mechanism assembly, remove three rivets marked " ★ " as shown in Figure 7.
(2) Remove five screws marked " ☆ " as shown in Figure 10.
(3) Disconnect all wires from the P.C. Board.

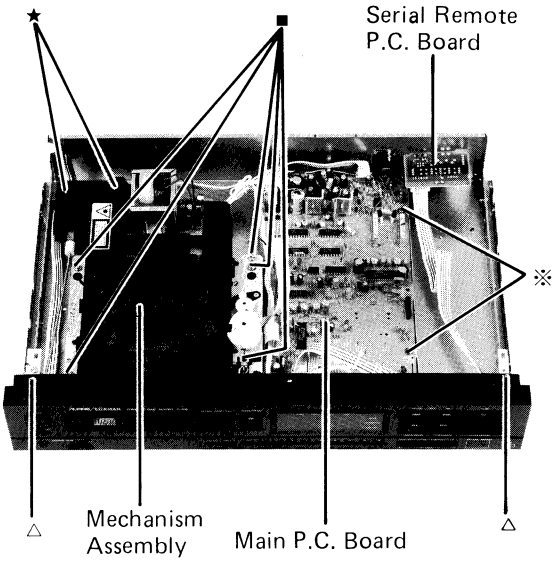


Figure 7

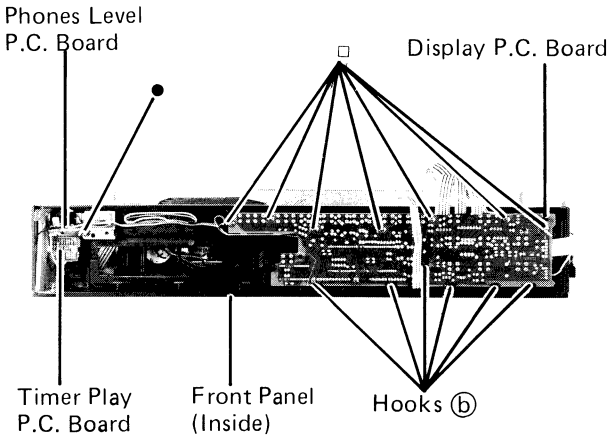


Figure 8

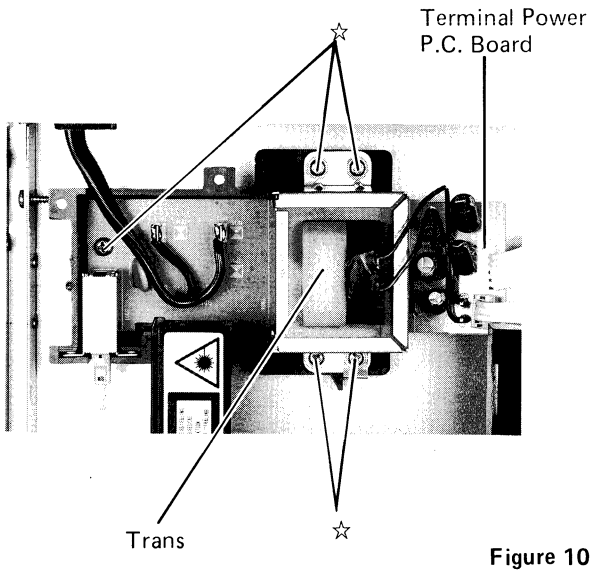


Figure 10

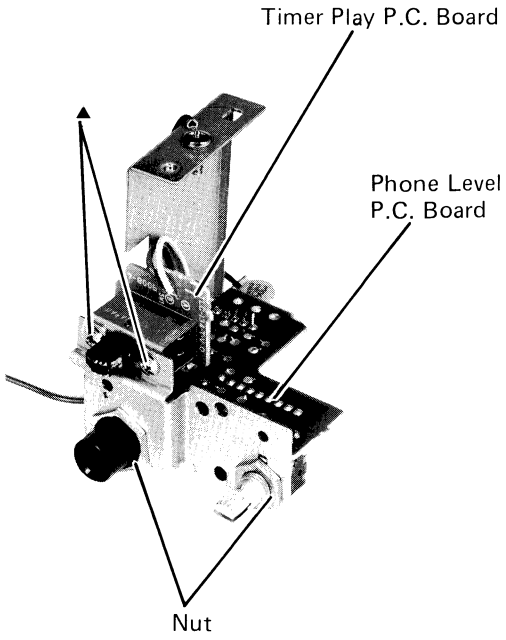
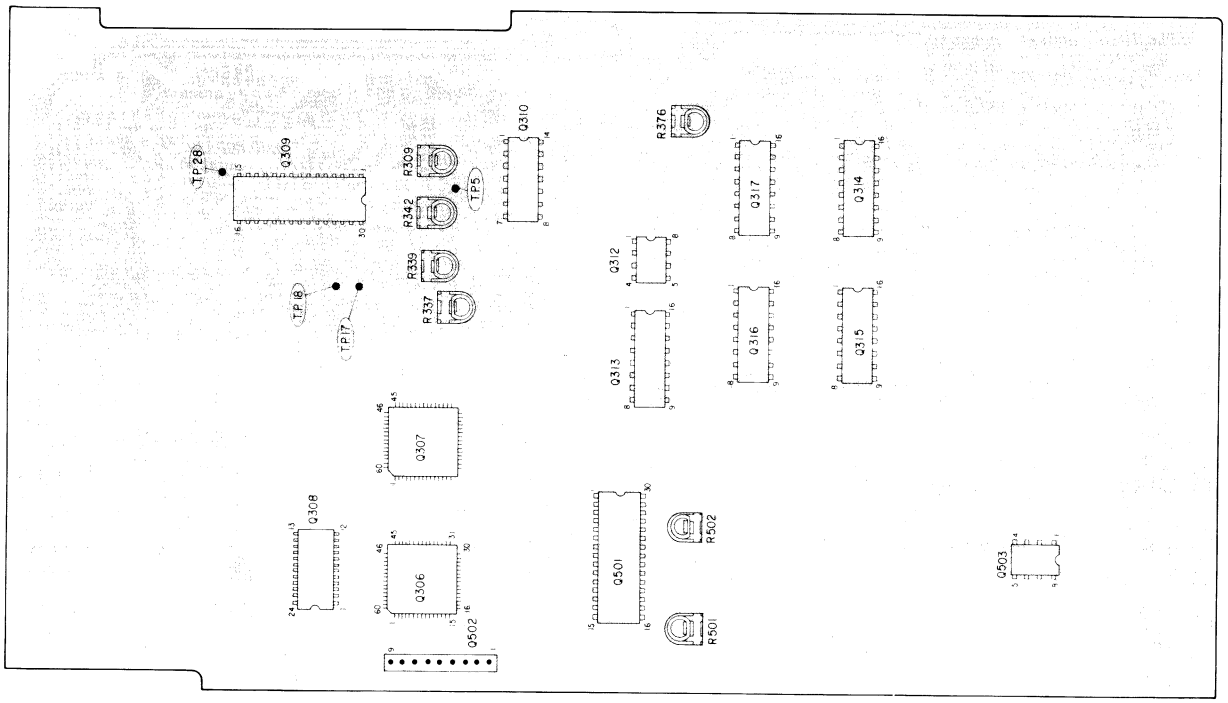


Figure 9

Adjustment Locations



Main PC Board

Figure 11

Adjustment Procedures

Adjustment Procedures After Laser Pickup Replacement

1. **Remove the tray and clamper.**
2. **Focus Balance and Offset Adjustments**
   (1) Set the unit to stop mode and connect the oscilloscope between T.P. 17 (FE) and T.P. 5 (VREF). (Focus error signal) (DC range: 5mV/DIV.)
   (2) Adjust semi-fixed resistor R339 (100K ohm) so that DC offset obtains 0V ±10mV.
   (3) Play back YEDS-7 DISC. (Any Track number is available.)
   (4) Connect the oscilloscope between T.P. 5 (VREF) and T.P. 28 (RF). (AC range: 0.2V/DIV., 0.5μsec./DIV.)
   (5) Adjust semi-fixed resistor R342 (20K ohm) so that 3T component of RF signal obtains max.

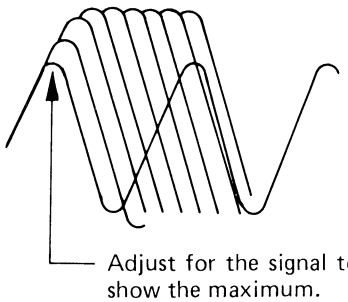


Figure 12

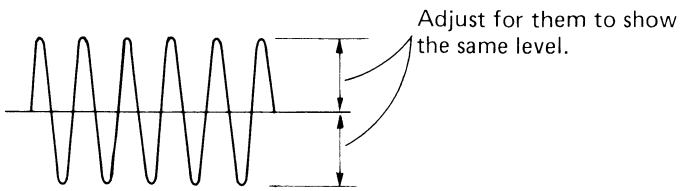


Figure 13

3. **Tracking Error Balance and Offset Adjustments**
   (1) Set the unit to stop mode and connect oscilloscope between T.P. 18 (TE signal) and T.P. 5 (VREF). (DC range: 5mV/DIV.)
   (2) Adjust semi-fixed resistor R337 (100K ohm) so that DC offset obtains 0V ±10mV.
   (3) Play back YEDS-7 DISC and shift oscilloscope range to DC 0.5V/DIV, 5msec./DIV.
   (4) Set the unit to search mode by UP/DOWN key.
   (5) Adjust semi-fixed resistor R309 (100K ohm) so that DC offset of tracking error signal obtains 0V during searching.

4. Anslog Output Offset Adjustment

This adjustment is not needed when pickup is replaced.

(1) Turn the power of the unit on.

(2) Connect DC voltmeter or oscilloscope to Q503 pin 1 (L ch) and pin 7 (R ch) on Main P.C. Board. Adjust semi-fixed resistor R502 (50K ohm) (L ch) and R501 (50K ohm) (R ch) so that offset (DC range) obtains 0 ±10mV.

5. Disc Motor Brake Adjustment

(1) Short-circuit pins 3 and 4 of Q313 (TC40538P) and connect pin 14 (T.P. 26) to VREF (T.P. 5).

(2) Turn power on and connect oscilloscope probes to pin 7 of Q313 and VREF (T.P. 5). (5mV range)

(3) Adjust semi-fixed VR R376 (50K ohm) by turning it so that voltage output obtains within ±5mV.

6. Cautions on Laser Pickup Removal

(1) When removing laser pickup, solder and short-circuit patterns or leads to protect laser pickup from damage which may be caused during the removal. (Refer to Figures 4 and 6.)

(2) Disconnect leads from connector after soldering is completed. Do not touch the pickup terminals with your hand.

(3) When mounting laser pickup, connect the leads to connector before unsoldering the solder used to short-circuit.

7. Cautions on Laser Pickup Replacement

(1) When mounting a new laser pickup, first connect the leads to connectors and then unsolder the solder used to protect laser diode on P.C. Board. (Refer to Figures 15 and 17.)

* Use a soldering iron grounded (or leakageless iron).

* Cover working bench with conductive mat grounded.

* Before proceeding job, always touch the conductive mat or ground lead with your both hands to discharge electric charges developed on your body.

< OPH-21 >

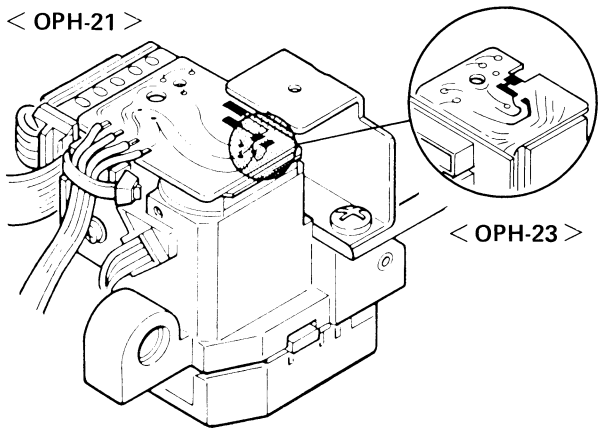


Figure 14

- Solder the patterns as shown in the illustration before disconnecting connector and leads.

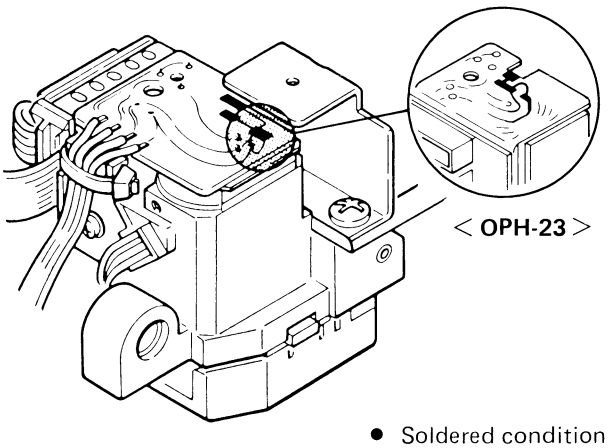


Figure 15

- Soldered condition.

< OPH-41 >

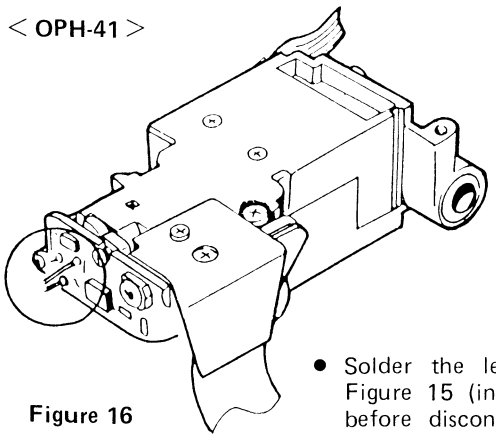


Figure 16

- Solder the leads as shown in Figure 15 (indicated by circle) before disconnecting lead connectors.

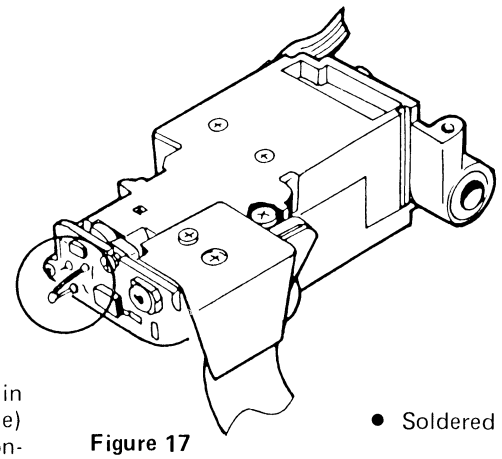


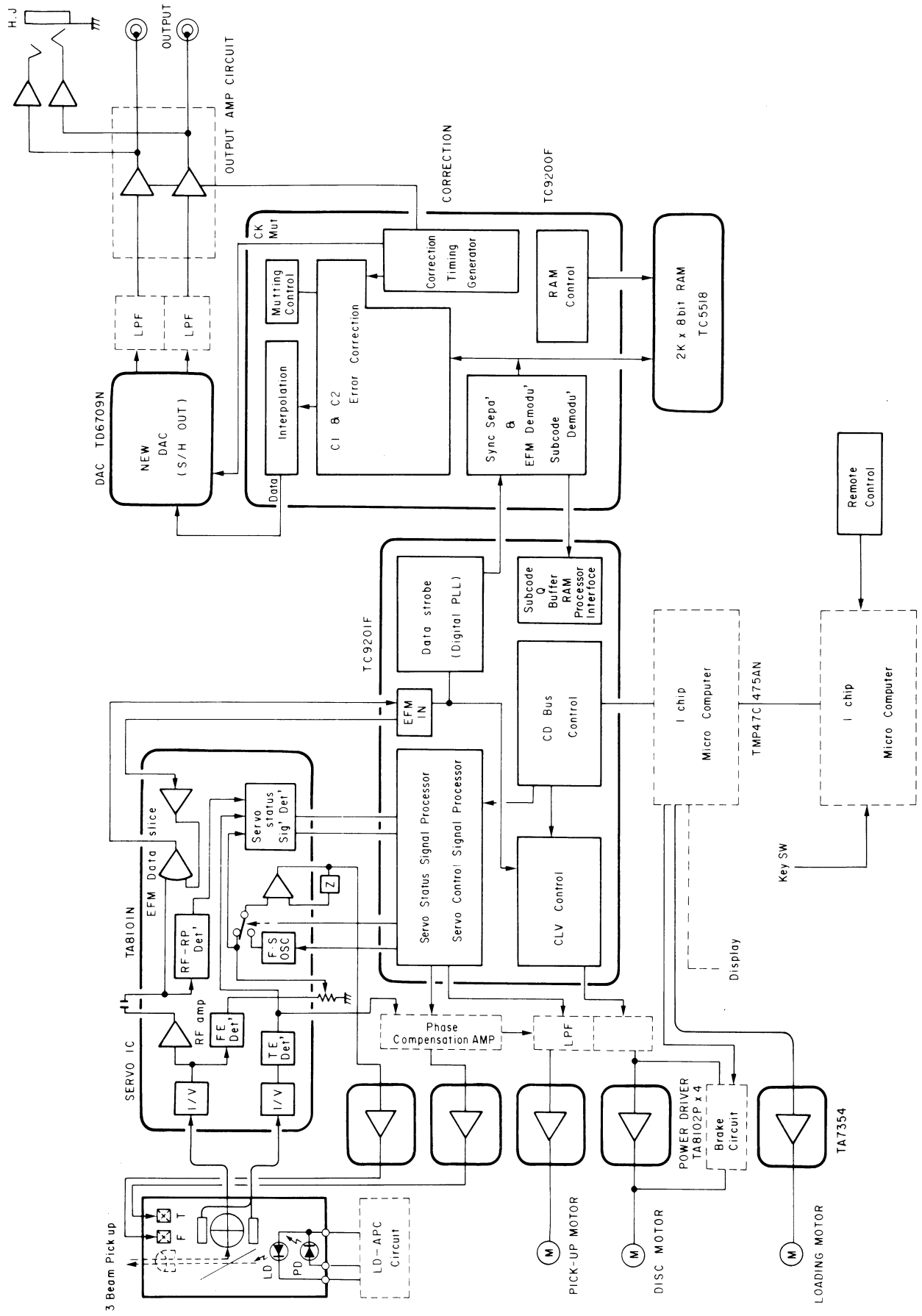
Figure 17

- Soldered condition.

CAUTION: The necessary distance between laser pickup and the viewers eye is only 2mm.

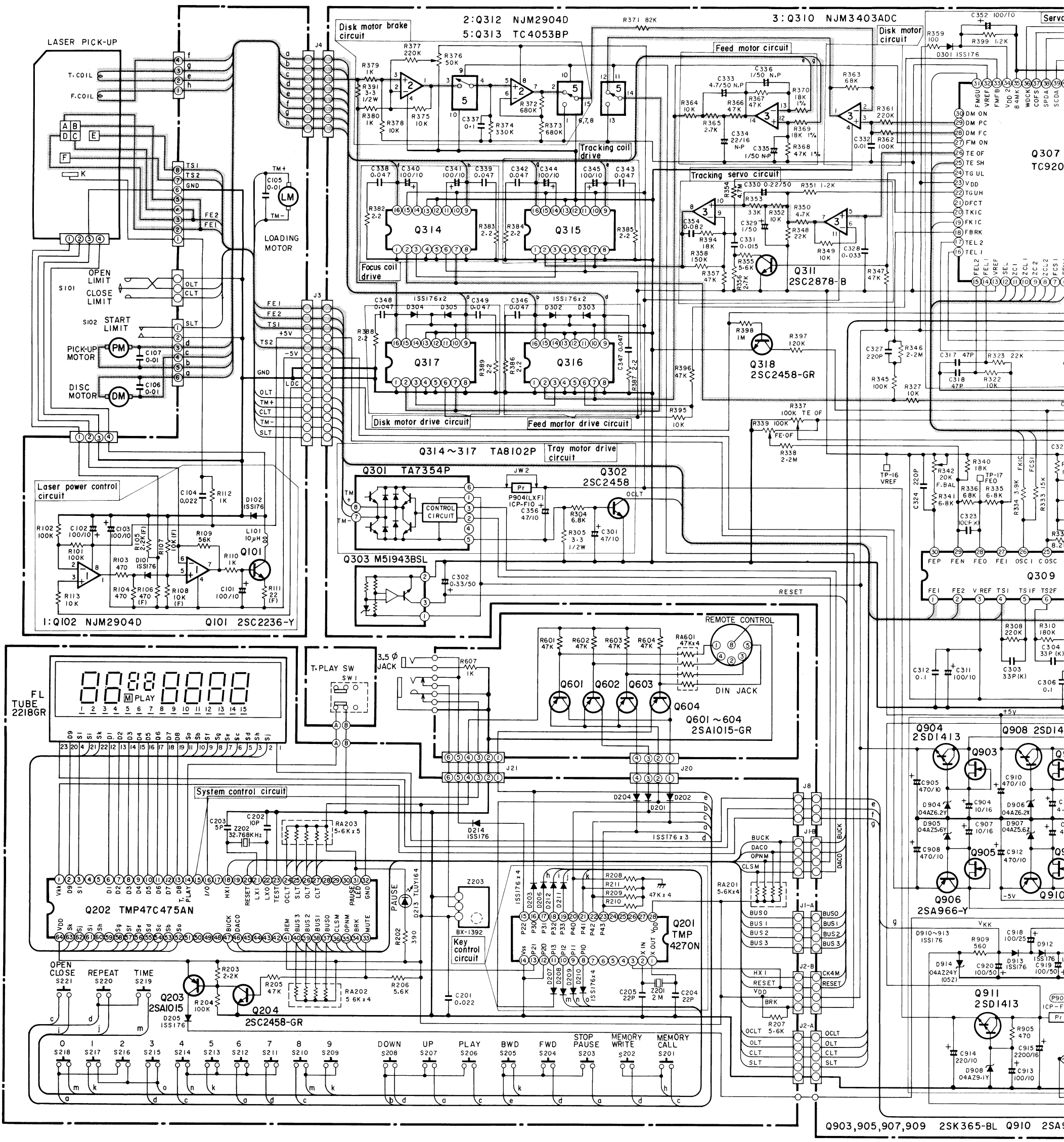
OPH-21 OPH-23	Patterns Figure 14.
OPH-41	Leads Figure 16.

Block Diagram



Schematic Diagram

IC	1:Q102 2:Q312 Q301 Q303 Q314 ~ Q317 5:Q313 3:Q310 Q307
Transistor(Q)	Q202 Q201 Q311 Q318 Q101 Q203 Q204 Q302 Q601 Q602 Q603 Q604 Q903 ~ Q911
Diode (D)	D101 D102 D304 D305 D302 D303 D301 D205 D213 D214 D203 D206 ~ D212 D204 D201 D202 D904 ~ D907 D914 D908 D909~



Q307 Q309 Q306 Q502 Q308 Q551 Q552 Q1

4 : Q503 Q501 1 : Q701

Q506 Q1

Q903 ~ Q911 Q902 Q901 Q504 Q505 Q507 Q508

D301 D306 D1 ~ D4 D1

D904 ~ D907 D902 D903 D901 D915

D914 D908 D909 ~ D913

Servo control circuit

Digital signal processing

Wireless Remocon Unit

Q307 TC9201F

Q306 TC9200F

Q308 TC5518BFL-20(T)

Q502 TD6102P

Q501 TD6709N

Q552 LP2OC9B3AT

Q1 μPD1943G

Q1 2SC2673

Q309 TA8101N

Q553 NJM79L08P

Q553 TA78L008AP

Q554

Q901 2SA1048

Q902 2SC2878-A

Q903 Q904 Q905 Q906 Q907 Q908 2SD1413

Q909 Q910 Q911 2SD1413

Q504 Q505 Q506 2SA1048

Q507 Q508

Q551

D/A Convertor

Servo signal generation circuit & EFM signal generation circuit

Mute signal circuit

Mute circuit

Aperture compensation & emphasis circuit

Power circuit

Headphone circuit

4 : Q503 NJM4560DX

Q504, 505 2SK365-BL

Q507, 508 2SC2878-B

1 : Q701 NJM4556S

Q910 2SA966-Y

POWER SWITCH

POWER CORD

POWER TRANSFORMER

AC INLET

HEADPHONE JACK

VR 50K x 2

BACK

FRONT

OUTPUT

Rch

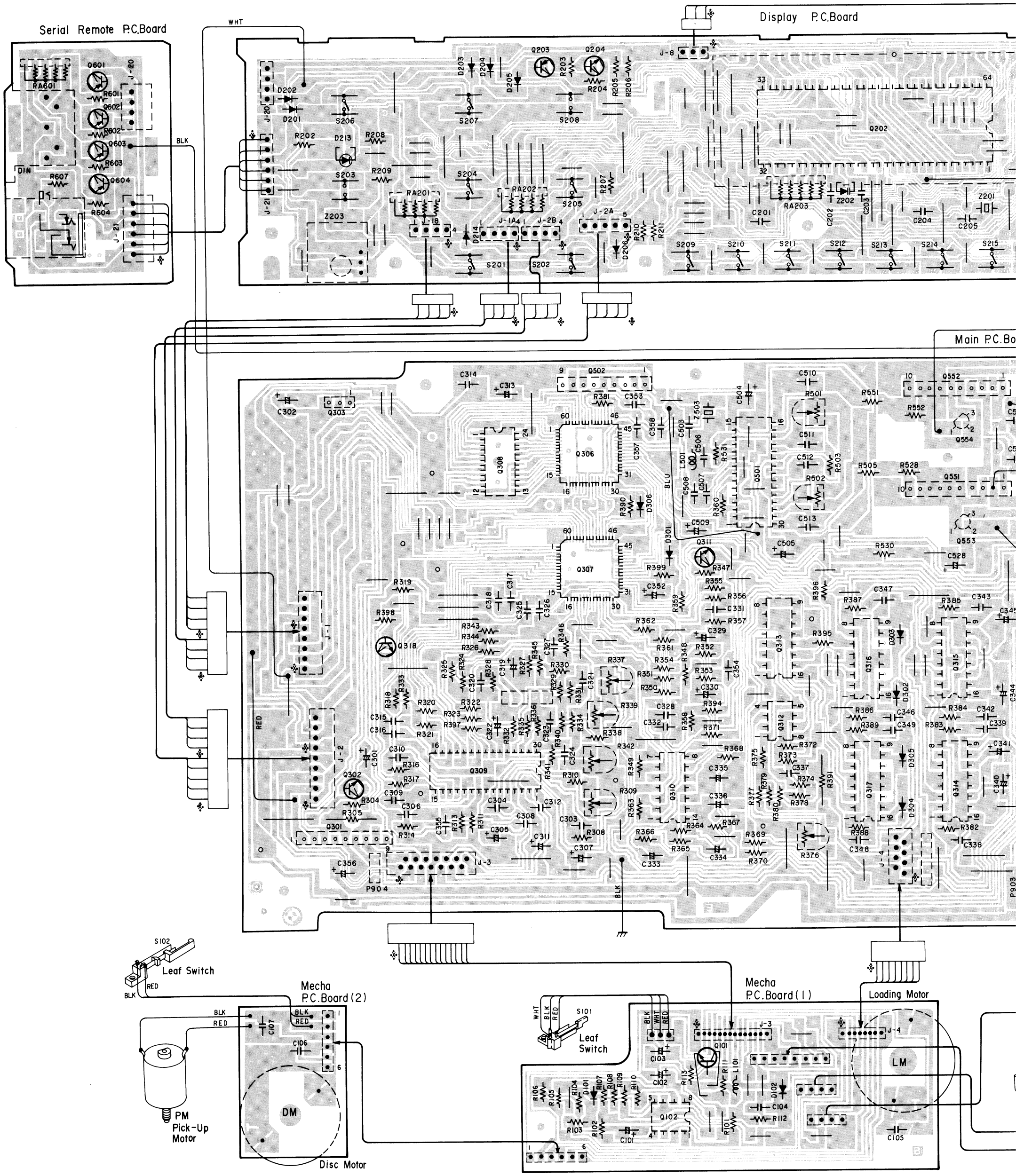
Lch

NOTES:

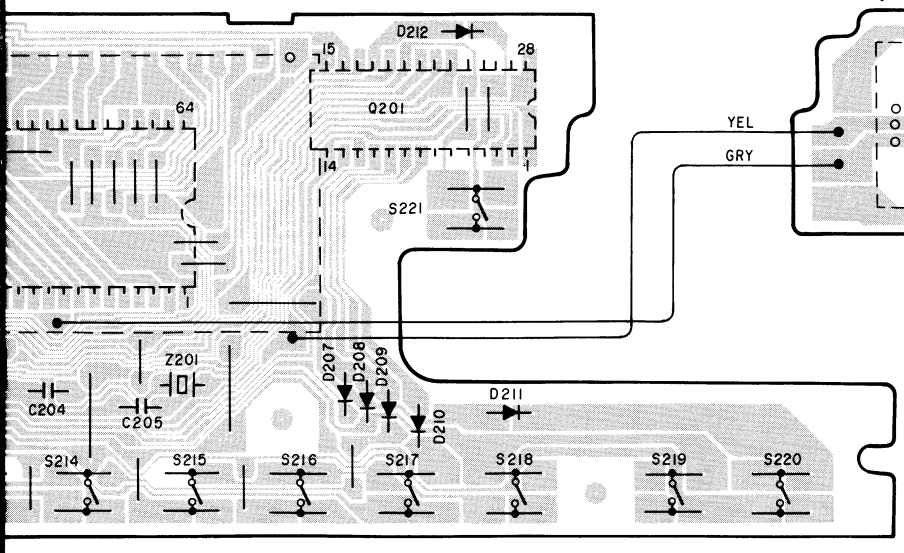
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

D - 102

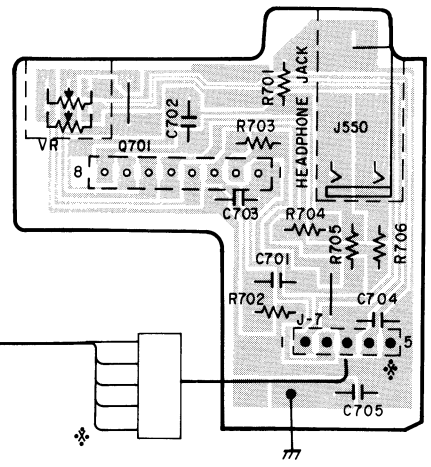
Parts Layout on P.C. Boards and Wiring Diagram



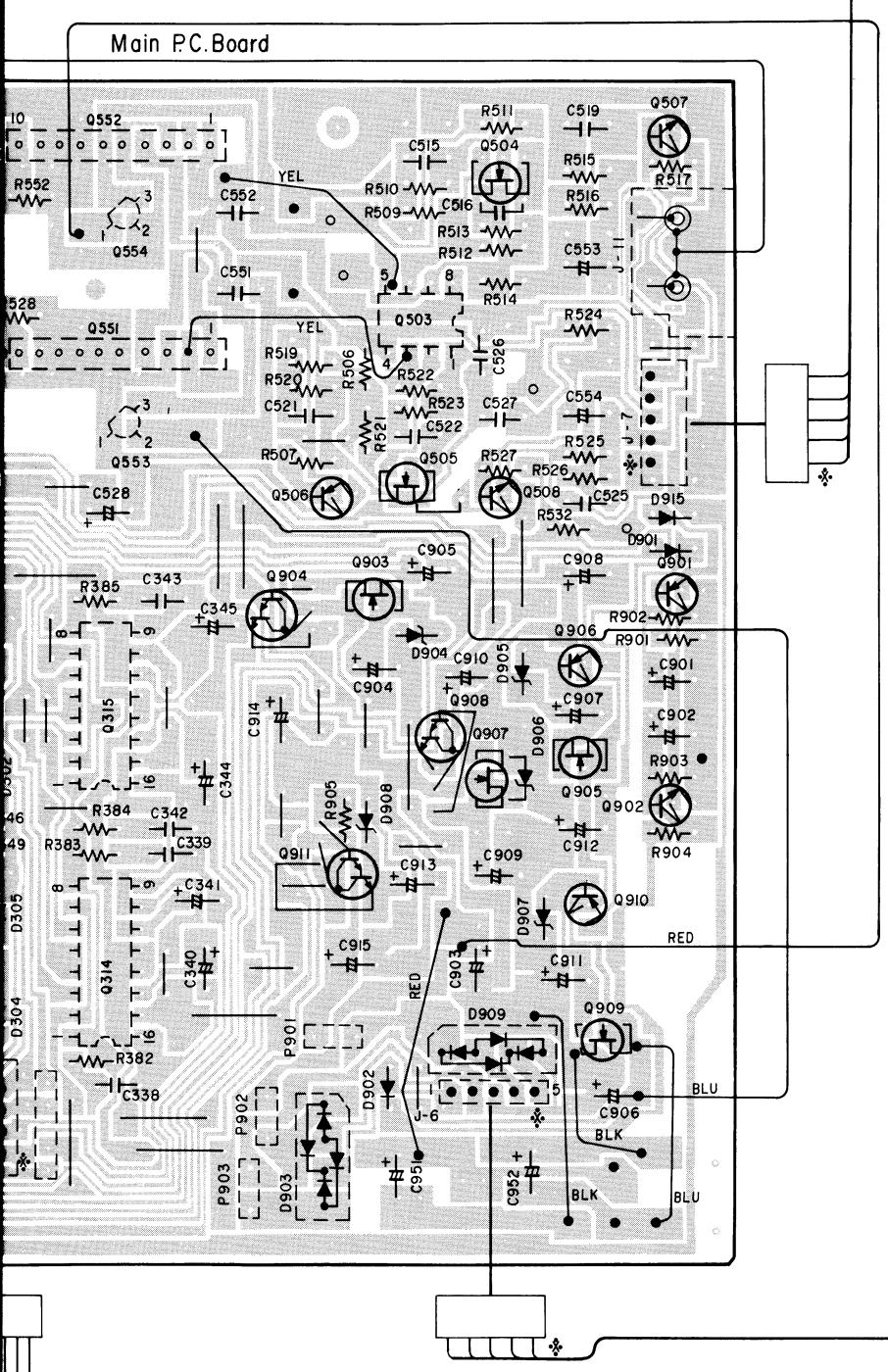
Timer Play P.C.Board



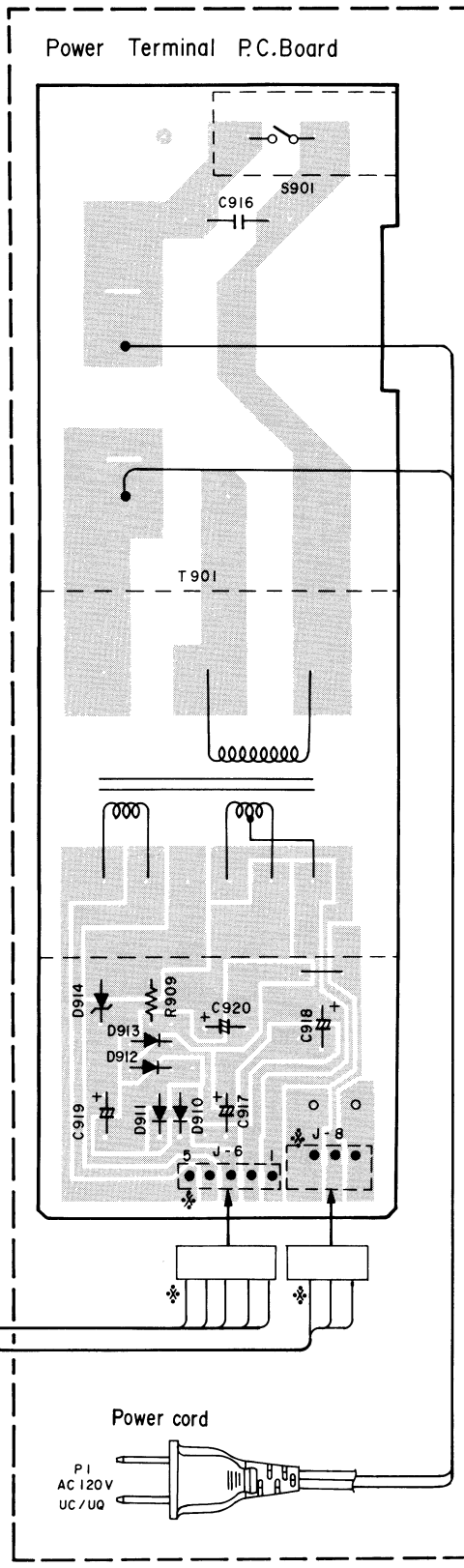
Phones Level P.C.Board



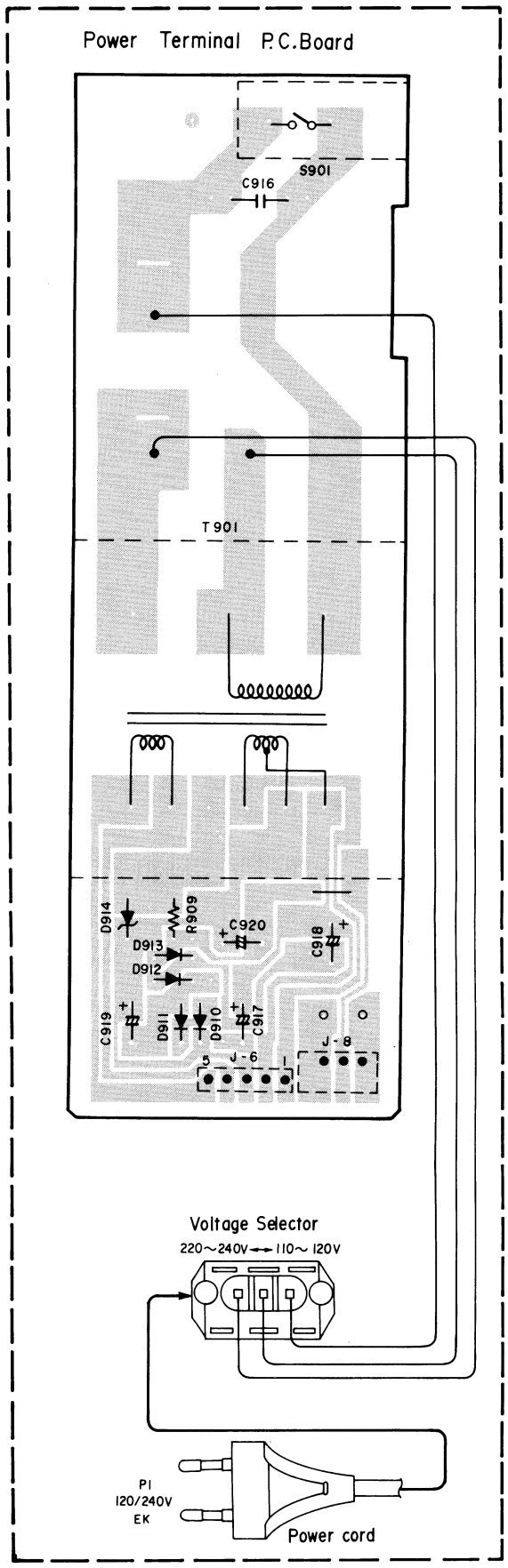
Main P.C.Board



Power Terminal P.C.Board



Power Terminal P.C.Board



BLU	Blue	VIO	Violet
GRN	Green	PNK	Pink
BLK	Black	GRN/WHT	Green/White
GRY	Gray	GRY/WHT	Gray/White
WHT	White	GRY/YEL	Gray/Yellow
RED	Red	GRN/YEL	Green/Yellow
BRN	Brown	SHLD	Shield
ORG	Orange		
YEL	Yellow		

Electrical Parts List

Resistors: Carbon resistors under ¼ watts are not mentioned in the parts list, please confirm them by schematic diagram.
uF = microfarads, pF = picofarads

Symbol No.	Part No.	Description
	IC's/Transistors	
Q101	36325540	Transistor, 2SC2236
Q102	22117698	IC, NJM2904D
Q201	40517667	IC, TMP47C475AN9671
Q202	40402258	IC, TMP4270N-9401
Q203	36534069	Transistor, 2SA1015
Q204	36332440	Transistor, 2SC2458
Q301	40325461	IC, TA7354P
Q302	36332460	Transistor, 2SC2458
Q303	22117892	IC, M51943BSL
Q306	40412002	IC, TC9200F
Q307	40412016	IC, TC9201AF
Q309	40377580	IC, TA8101N
Q310	22117709	IC, NJM3403AD
Q311	36342214	Transistor, 2SC2878
Q312	22117698	IC, NJM2904D
Q313	40470532	IC, TC4053BP
Q314	40377590	IC, TA8102P
Q315	40377590	IC, TA8102P
Q316	40377590	IC, TA8102P
Q317	40377590	IC, TA8102P
Q318	36332460	Transistor, 2SC2458
Q501	40272760	IC, TD6709N
Q502	40271774	IC, TD6102P
Q503	22114866	IC, NJM4560DX
Q504	36058731	FET, 2SK365
Q505	36058731	FET, 2SK365
Q506	36534448	Transistor, 2SA1048
Q507	36342214	Transistor, 2SC2878
Q508	36342214	Transistor, 2SC2878
Q551	22117885	IC, LP20C9B3AT
Q552	22117885	IC, LP20C9B3AT
Q553	22117915	IC, NJM79L08A
Q554	40372860	Transistor, TA78L008AP
Q601	36534069	Transistor, 2SA1015
Q602	36534069	Transistor, 2SA1015
Q603	36534069	Transistor, 2SA1015
Q604	36534069	Transistor, 2SA1015
Q701	22117838	IC, NJM4556S
Q901	36534448	Transistor, 2SA1048
Q902	36342204	Transistor, 2SC2878

Symbol No.	Part No.	Description
Q903	36058731	FET, 2SK365
Q904	36868350	Transistor, 2SD1413
Q905	36058731	FET, 2SK365
Q906	36533244	Transistor, 2SA966
Q907	36058731	FET, 2SK365
Q908	36868350	Transistor, 2SD1413
Q909	36058731	FET, 2SK365
Q910	36533244	Transistor, 2SA966
Q911	36868350	Transistor, 2SD1413
	Diodes/LED's	
D201	37160571	1SS176
D202	37160571	1SS176
D203	37160571	1SS176
D204	37160571	1SS176
D205	37160571	1SS176
D206	37160571	1SS176
D207	37160571	1SS176
D208	37160571	1SS176
D209	37160571	1SS176
D210	37160571	1SS176
D211	37160571	1SS176
D212	37160571	1SS176
D213	38690750	LED, TLUY164
D214	37160570	1SS176
D301	37160571	1SS176
D302	37160571	1SS176
D303	37160571	1SS176
D303	37160571	1SS176
D304	37160571	1SS176
D305	37160571	1SS176
D306	37160571	1SS176
D901	37160571	1SS176
D902	37160571	1SS176
D903	22119188	Bridge, SIVB10
D904	37116526	Zener, 04AZ6.2Z
D905	37116416	Zener, 04AZ5.6Y
D906	37116507	Zener, 04AZ6.2X
D907	37116416	Zener, 04AZ5.6Y
D908	37116917	Zener, 04AZ9.1Y
D909	22119188	Bridge, SIVB10

Symbol No.	Part No.	Description
D910	37160571	1SS176
D911	37160571	1SS176
D912	37160571	1SS176
D913	37160571	1SS176
D914	37110664	Zener, 05Z24-Y
D915	37160571	1SS176

Capacitors

uF = microfarads, pF = picofarads
D = ±0.5pF, J = ±5%, K = ±10%, M = ±20%,
Z = −20+80%, P = 0+100%
ABBREVIATIONS: BL = Barrier Layer,
CD = Ceramic Disk,
EL = Electrolytic, MY = Mylar,
PP = Polypropylene

C201	22342223	BL	0.022 uF/50V, Z
C202	22361100	CD	10 pF/50V
C203	22361509	CD	5 pF/50V
C204	22361220	CD	22 pF/50V, J
C205	22361220	CD	22 pF/50V, J
C301	22483470	EL	47 uF/10V
C302	22488338	EL	0.33 uF/50V
C303	22361330	CD	33 pF/50V, J
C304	22361330	CD	33 pF/50V, J
C305	22483221	EL	220 uF/10V
C306	22360880	BL	0.1 uF/16V, Z
C307	22485220	EL	22 uF/16V
C308	22361709	CD	7 pF/50V, D
C309	22360544	BL	0.01 uF/25V, K
C310	22360544	BL	0.01 uF/25V, K
C311	22483101	EL	100 uF/10V
C312	22360880	BL	0.1 uF/16V, Z
C313	22483101	EL	100 uF/10V
C314	22360880	BL	0.1 uF/16V, Z
C315	22361470	CD	47 pF/50V, J
C316	22361470	CD	47 pF/50V, J
C317	22361470	CD	47 pF/50V, J
C318	22361470	CD	47 pF/50V, J
C319	22488229	EL	2.2 uF/50V
C320	22361220	CD	22 pF/50V, J

Symbol No.	Part No.	Description
C321	22371393	MY 0.039 uF/50V, J
C322	22483470	EL 47 uF/10V
C323	22349101	CD 100 pF/50V, K
C324	22349221	CD 220 pF/50V, K
C325	22361470	CD 47 pF/50V, J
C326	22361470	CD 47 pF/50V, J
C327	22349221	CD 220 pF/50V, K
C328	22371333	MY 0.033 uF/50V, J
C329	22488109	EL 1 uF/50V
C330	22488228	EL 0.22 uF/50V
C331	22371153	MY 0.015 uF/50V, J
C332	22360544	BL 0.01 uF/25V, K
C333	22476479	EL 4.7 uF/25V
C334	22473220	EL 22 uF/10V
C335	22478109	EL 1 uF/50V
C336	22478109	EL 1 uF/50V
C337	22371104	MY 0.1 uF/50V, J
C338	22360881	BL 0.047 uF/16V, Z
C339	22360881	BL 0.047 uF/16V, Z
C340	22483101	EL 100 uF/10V
C341	22483101	EL 100 uF/10V
C342	22360881	BL 0.047 uF/16V, Z
C343	22360881	BL 0.047 uF/16V, Z
C344	22483101	EL 100 uF/10V
C345	22483101	EL 100 uF/10V
C346	22360881	BL 0.047 uF/16V, Z
C347	22360881	BL 0.047 uF/16V, Z
C348	22360881	BL 0.047 uF/16V, Z
C349	22360881	BL 0.047 uF/16V, Z
C352	22483101	EL 100 uF/10V
C353	22349102	CD 1000 pF/50V, K
C354	22371823	MY 0.082 uF/50V, J
C355	22361209	CD 2 pF/50V, J, CH
C356	22483470	EL 47 uF/10V
C357	22361220	CD 22 pF/50V, J
C358	22349102	CD 1000 pF/50V, K
C503	22361509	CD 5 pF/50V, D
C504	22482102	EL 1000 uF/6.3V
C505	22482102	EL 1000 uF/6.3V
C506	22361270	CD 27 pF/50V, J
C507	22361509	CD 5 pF/50V, D
C508	22342103	CD 0.01 uF/50V, Z
C509	22482331	EL 330 uF/6.3V
C510	22321060	PP 1800 pF/50V, J
C511	22321060	PP 1800 pF/50V, J

Symbol No.	Part No.	Description
C512	22321060	PP 1800 pF/50V, J
C513	22321060	PP 1800 pF/50V, J
C515	22321058	PP 1200 pF/50V, J
C516	22371102	MY 1000 pF/50V, J
C519	22371102	MY 1000 pF/50V, J
C521	22321058	PP 1200 pF/50V, J
C522	22371102	MY 1000 pF/50V, J
C525	22371102	MY 1000 pF/50V, J
C526	22371103	MY 0.01 uF/50V, J
C527	22371103	MY 0.01 uF/50V, J
C528	22485100	EL 10 uF/16V
C551	22371473	EL 0.047 uF/50V, J
C552	22371473	EL 0.047 uF/50V, J
C553	20450003	EL 10 uF/16V
C554	20450003	EL 10 uF/16V
C701	22361100	CD 10 uF/50V
C702	22361100	CD 10 uF/50V
C703	22371103	MY 0.01 uF/50V, J
C704	22371103	MY 0.01 uF/50V, J
C705	22342223	BL 0.022 uF/50V, Z
C901	22486101	EL 100 uF/250V
C902	22483101	EL 100 uF/250V
C903	22460035	EL 3300 uF/16V
C904	22485100	EL 10 uF/16V
C905	22483471	EL 470 uF/10V
C906	22485102	EL 1000 uF/16V
C907	22485100	EL 10 uF/16V
C908	22483471	EL 47 uF/10V
C909	22488479	EL 4.7 uF/50V
C910	22483471	EL 47 uF/10V
C911	22488479	EL 4.7 uF/50V
C912	22483471	EL 470 uF/10V
C913	22483101	EL 100 uF/10V
C914	22483221	EL 220 uF/10V
C915	22485222	EL 2200 uF/16V
C916	22340232	CD 0.047 uF
C917	22486101	EL 100 uF/25V
C918	22486101	EL 100 uF/25V
C919	22488101	EL 100 uF/50V
C920	22488101	EL 100 uF/50V
C951	22440604	EL 2200 uF/16V
C952	22440604	EL 2200 uF/16V

Symbol No.	Part No.	Description
Resistors All resistors are carbon film 1/6W, ±5% unless otherwise noted. K = 1000, M = 1000000		
R202	22584391	390 ohm
R203	22584222	2.2K ohm
R204	22584104	100K ohm
R205	22584473	47K ohm
R206	22584562	5.6K ohm
R207	22584562	5.6K ohm
R208	22584473	47K ohm
R209	22584473	47K ohm
R210	22584473	47K ohm
R211	22584473	47K ohm
R304	22584682	6.8K ohm
R305	22547339	3.3 ohm x 1/2W
R308	22584224	220K ohm
R309	22658884	Variable 100K ohm
R310	22584184	180K ohm
R311	22584683	68K ohm
R813	22584153	15K ohm
R314	22584333	33K ohm
R316	22584564	560K ohm
R317	22584151	150 ohm
R318	22584102	1K ohm
R319	22584273	27K ohm
R320	22584822	8.2K ohm
R321	22584822	8.2K ohm
R322	22584103	10K ohm
R323	22584223	22K ohm
R324	22584824	820K ohm
R325	22584123	12K ohm
R326	22584123	12K ohm
R327	22584103	10K ohm
R328	22584154	150K ohm
R329	22584153	15K ohm
R330	22584103	10K ohm
R331	22584102	1K ohm
R332	22584222	8.2K ohm
R333	22584153	15K ohm
R334	22584392	3.9K ohm
R335	22584682	6.8K ohm
R336	22584683	68K ohm
R337	22658884	Variable 100K ohm

Symbol No.	Part No.	Description
R338	22584225	2.2M ohm
R339	22658884	Variable 100K ohm
R340	22584183	18K ohm
R341	22584682	6.8K ohm
R342	22658901	Variable 20K ohm
R343	22584223	22K ohm
R344	22584103	10K ohm
R345	22584104	100K ohm
R346	22584225	2.2M ohm
R347	22584374	47K ohm
R348	22584223	22K ohm
R349	22584103	10K ohm
R350	22584472	4.7K ohm
R351	22584122	1.2K ohm
R352	22584103	10K ohm
R353	22584333	33K ohm
R354	22555475	4.7M ohm
R355	22584562	5.6K ohm
R356	22584272	2.7K ohm
R357	22584473	47K ohm
R358	22584154	150K ohm
R359	22584101	100 ohm
R360	22584183	18K ohm
R361	22584224	220K ohm
R362	22584104	100K ohm
R363	22584683	68K ohm
R364	22584103	10K ohm
R365	22584272	2.7K ohm
R366	22584473	47K ohm
R367	22570743	Metal Film 47K ohm
R368	22570743	Metal Film 47K ohm
R369	22570738	Metal Film 18K ohm, 1/2W
R370	22570738	Metal Film 18K ohm, 1/2W
R371	22584823	82K ohm
R372	22584684	680K ohm
R373	22584684	680K ohm
R374	22584334	330K ohm
R375	22584103	10K ohm
R376	22658828	Variable 50K ohm
R377	22584224	220K ohm
R378	22584103	10K ohm
R379	22584102	1K ohm
R380	22584102	1K ohm
R381	22584333	33K ohm
R382	22584229	2.2 ohm

Symbol No.	Part No.	Description
R383	22584229	2.2 ohm
R384	22584229	2.2 ohm
R385	22584229	2.2 ohm
R386	22584229	2.2 ohm
R387	22584229	2.2 ohm
R388	22584229	2.2 ohm
R389	22584229	2.2 ohm
R390	22584102	1K ohm
R391	22547339	3.3 ohm, 1/2W
R394	22584183	18K ohm
R395	22584103	10K ohm
R396	22584473	47K ohm
R397	22584124	120K ohm
R398	22584105	1M ohm
R399	22584122	1.2K ohm
R501	22658828	Variable 50K ohm
R502	22658828	Variable 50K ohm
R503	22584123	12K ohm
R505	22584103	10K ohm
R506	22584474	470K ohm
R507	22584104	100K ohm
R509	22584122	1.2K ohm
R510	22584822	8.2K ohm
R511	22555106	10M ohm, 1/4W
R512	22584473	47K ohm
R513	22584682	6.8K ohm
R514	22555221	220 ohm
R515	22584104	100K ohm
R516	22555102	1K ohm
R517	22584473	47K ohm
R519	22584122	1.2K ohm
R520	22584822	8.2K ohm
R521	22555106	10M ohm, 1/4W
R522	22584473	47K ohm
R523	22584682	6.8K ohm
R524	22555221	220 ohm
R525	22584104	100K ohm
R526	22555102	1K ohm
R527	22584473	47K ohm
R528	22584103	10K ohm
R530	22584103	10K ohm
R531	22584183	18K ohm
R532	22584124	120K ohm
R551	22584103	10K ohm
R552	22584103	10K ohm

Symbol No.	Part No.	Description
R601	22584562	5.6K ohm
R602	22584562	5.6K ohm
R603	22584562	5.6K ohm
R604	22584562	5.6K ohm
R607	22584102	1K ohm
R701	22584333	33K ohm
R702	22584333	33K ohm
R703	22584332	3.3K ohm
R704	22584332	3.3K ohm
R705	22584101	100 ohm
R706	22584101	100 ohm
R901	22584104	100K ohm
R902	22584392	3.9K ohm
R903	22584562	5.6K ohm
R904	22584223	22K ohm
R905	22584471	470 ohm
R909	22584561	560 ohm
RA201	22540655	5.6K ohm x 4
RA202	22540655	5.6K ohm x 4
RA203	22540649	5.6K ohm x 5
RA601	22540264	47K ohm x 4

Miscellaneous

	DM	25792092	Disc Motor
	HJ	22198062	Jack, 6D-HP
	J11	22198227	Jack, US, 2P-P
	L501	22291401	Choke Coil, 0.22μH
	LM	25792093	Loading Motor
●	P1	22176574	Power Cord
▲	P1	22176574	Power Cord
■	P1	22169173	Socket, AC-39
	P901	22118223	ICP-F25-1.0A-S
	P902	22118223	ICP-F25-1.0A-S
	P903	22118229	ICP-F20-0.8A-S
	P904	22118224	ICP-F10-0.4A-S
	PM	25792091	Pick Up Motor
	RJ	22120116	Jack, Remote Control
	RJ	22120116	Jack, Remote Control

	Symbol No.	Part No.	Description
	RJ	22120116	Jack, Remote Control
	RJ	22120116	Jack, Remote Control
	S101	22196719	Switch, Leaf-1C1P
	S102	22196598	Switch, Leaf-1C2P
	S201	22196796	Key Switch
	S202	22196796	Key Switch
	S203	22196796	Key Switch
	S204	22196796	Key Switch
	S205	22196796	Key Switch
	S206	22196796	Key Switch
	S207	22196796	Key Switch
	S208	22196796	Key Switch
	S209	22196858	Key Switch
	S210	22196858	Key Switch
	S211	22196858	Key Switch
	S212	22196858	Key Switch
	S213	22196858	Key Switch
	S214	22196858	Key Switch
	S215	22196858	Key Switch
	S216	22196858	Key Switch
	S217	22196858	Key Switch
	S218	22196858	Key Switch
	S219	22196858	Key Switch
	S220	22196858	Key Switch
	S221	22196796	Key Switch
	S901	22196362	Switch, Power
	S1	22196775	Switch, Slide-6C2P
●	T901	22224871	Power Transformer
▲	T901	22224871	Power Transformer
■	T901	22224872	Power Transformer
	VR	22611413	Variable Resistor 50K ohm, A
	Z201	22153383	Crystal, CSA2.00MK11
	Z202	22153273	X-RV-38-32K
	Z203	22117745	IC, BX-1392
	Z501	22137780	Low-pass-filter
	Z502	22137780	Low-pass-filter
	Z503	22153390	Oscillator, 67 MHz

Note: ● : For North American model only (UC), ■ : For General Foreign model only (EK),
▲ : For Canadian model only (UQ), Others: Common

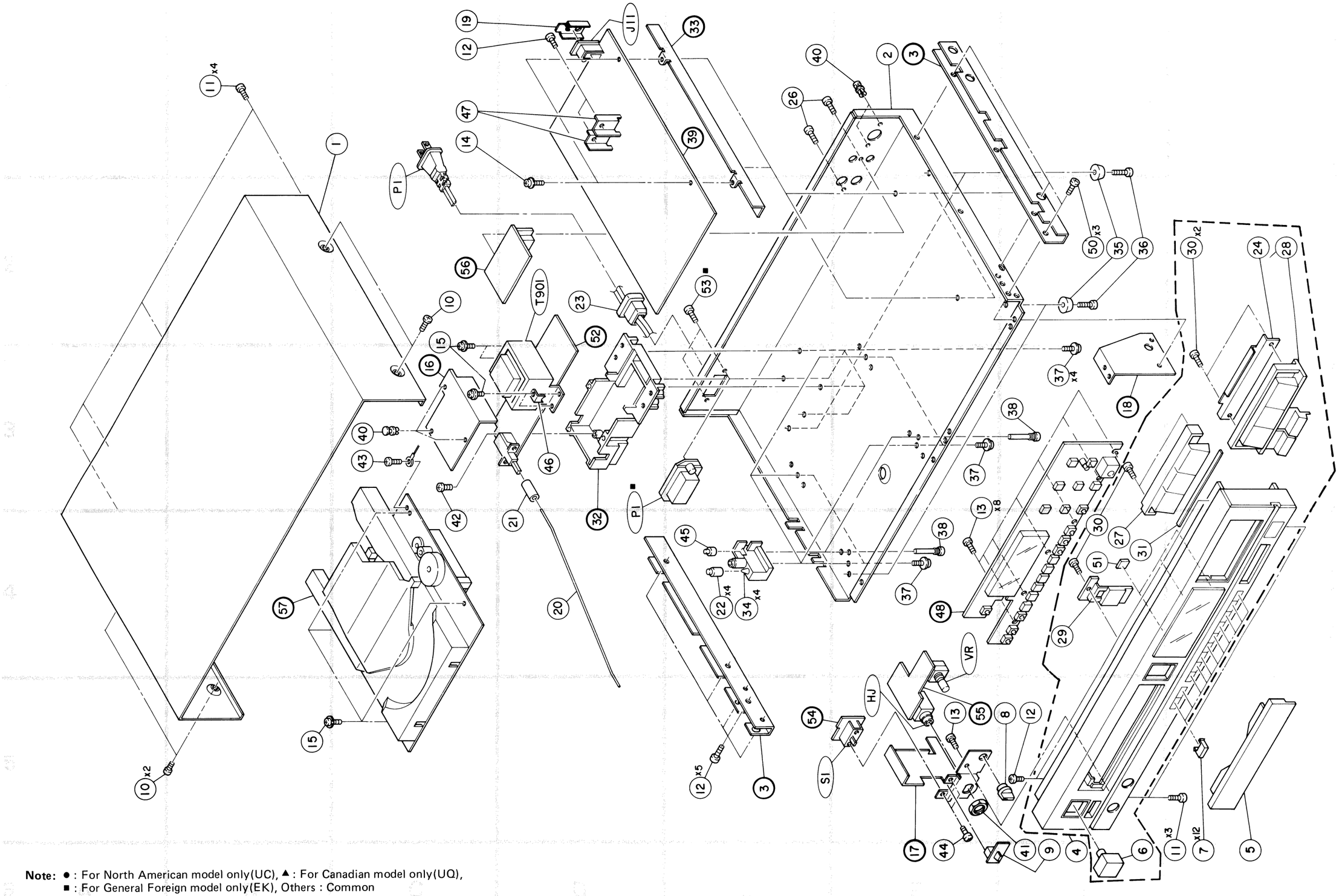
Cabinet Assembly Parts List

Symbol No.	Index	Part No.	Description
1	2-B	20823133	Cover, 30
● 2	1-F	22719456	Chassis, Unit
▲ 2	1-F	22719456	Chassis, Unit
■ 2	1-F	22179457	Chassis, Unit
4	6-G	20017354	Assembly, Panel 35MLXA
5	6-H	20831935	Panel, Tray-K
6	6-G	20872220	Knob, Power-K
7	6-H	20872272	Knob, 10 Key
8	5-F	20872225	Knob, Bias
9	6-G	20872226	Knob, Slide-R
10		22707185	Screw (M4 x 8)
11		22707911	Screw (M3 x 8)
12		22707842	Screw (M3 x 8)
13		22707844	Screw (M3 x 10)
14	2-C	22708022	Screw (M3 x 6)
15		22707798	Screw (M3 x 10)
19	1-C	22747145	Shield, US-2P
20	4-C	22764372	ROD, 30
21	4-C	22764307	Joint, 2.5
22	4-E	25761545	Cushion
● 23	2-D	25844322	Cord, Bush-2271
▲ 23	2-D	25844322	Cord, Bush-2271
24	2-H	20024286	Holder, Logic
26	1-E	22708118	Screw (M3 x 8)
27	4-G	20872216	Knob, 3-K
28	2-H	20872217	Knob, 5-K
29	4-G	20872218	Knob, Eject-K
30		22707326	Screw (M3 x 10)
31	4-G	25872391	BAR, Logic
34	4-E	20844258	Support, Chassis
35	2-G	22874085	Foot
36	2-G	22708033	Screw (M3 x 10)
37		22708045	Screw (M3 x 8)
38		22708593	Screw, Mecha
40		22705020	P, Rivet
41	6-G	22705020	Nut, M12-T2
42	4-C	22702202	Screw (M3 x 8)
43	3-C	22707445	Screw (M3 x 6)
44	6-F	22708528	Screw (M2.6 x 3)
45	4-E	22764374	Cushion, Screw
46	3-D	25779619	Spring, Earth

Symbol No.	Index	Part No.	Description
47	1-C	20036111	Radiator
50	2-G	22707910	Screw (M3 x 6)
51	4-G	25872449	Cushion, Rubber
53	2-E	22707364	Screw (M3 x 4)

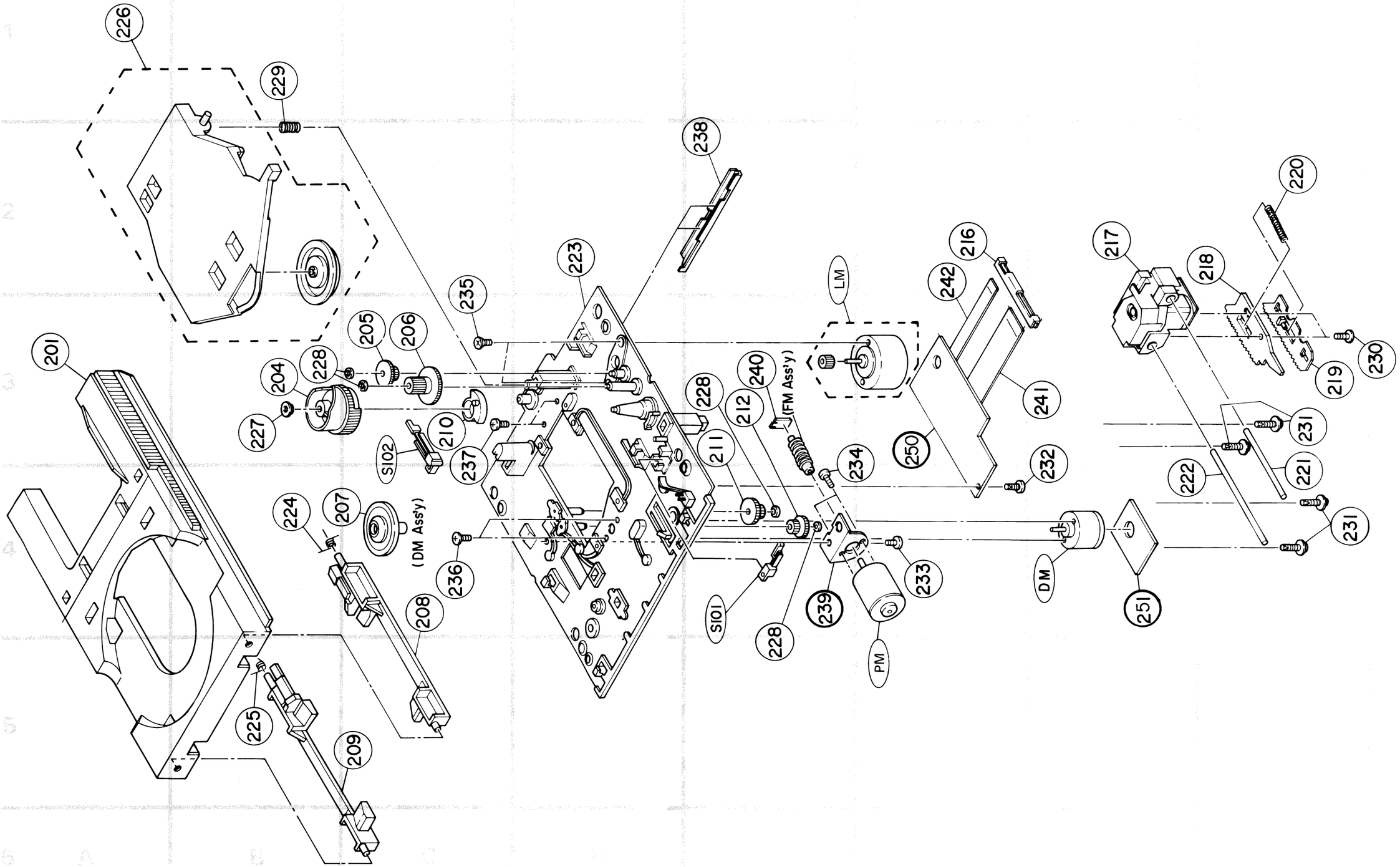
Note: ● : For North American model only (UC), ■ : For General Foreign model only (EK),
▲ : For Canadian model only (UQ), Others: Common

Exploded View (Cabinet)



Note: ● : For North American model only(UC), ▲ : For Canadian model only(UQ),
■ : For General Foreign model only(EK), Others : Common

Exploded View (Mechanism)



Mechanism Assembly Parts List

Symbol No.	Index	Part No.	Description
201	3-A	20778195	Disc, Tray
204	3-B	20727166	Gear, Cam
205	3-C	20727164	Gear, Drive-A
206	3-C	20727165	Gear, Drive-B
207	4-C	20723159	Disc, Table
208	4-C	20754257	Disc, Lifter (R)
209	5-C	20754256	Disc, Lifter (L)
210	3-C	20754255	Cam, Switch
211	3-E	20727161	Gear, Pulley Drive-A
212	3-E	20727162	Gear, Pulley Drive-B
216	2-F	25853064	Edging-PC
217	2-G	22155214	Laser Pick-up OPH-23
218	2-H	20727159	Gear, Rack (A)
219	3-H	20727160	Gear, Rack (B)
220	2-H	25777533	Spring, Rack
221	4-H	20764280	Shaft Guide-A
222	4-H	20764266	Shaft Guide-B
223	2-D	20743180	Chassis, Main
224	4-B	25778401	Spring, Lifter (L)
225	5-B	25778400	Spring, Lifter (R)
226	1-A	25792076	Assembly, Clamper lever
227	3-B	25783444	Bushing
228		25783443	Bushing
229	1-B	25777531	Spring, Clamper Lever
230	3-I	22708531	Screw, ϕ2.6 x 5mm
231		22708096	Screw, ϕ2.6 x 12mm
232	4-G	22701338	Screw, ϕ2.6 x 8mm
233	4-F	22707350	Screw, ϕ2.6 x 5mm
234	3-E	22708528	Screw, ϕ2.6 x 3mm
235	3-C	22701361	Screw, ϕ2.6 x 5mm
236	4-C	22701467	Screw, ϕ2 x 3mm
237	3-C	22708542	Screw, ϕ3 x 8mm
238	2-E	20743183	Upport, Chassis
240	3-E	25779512	Drive, Spring
241	3-G	22180313	Jump-Wire (100)
242	2-F	22180314	Jump-Wire (200)

Symbol No.	Part No.	Description

Packing Assembly Parts List

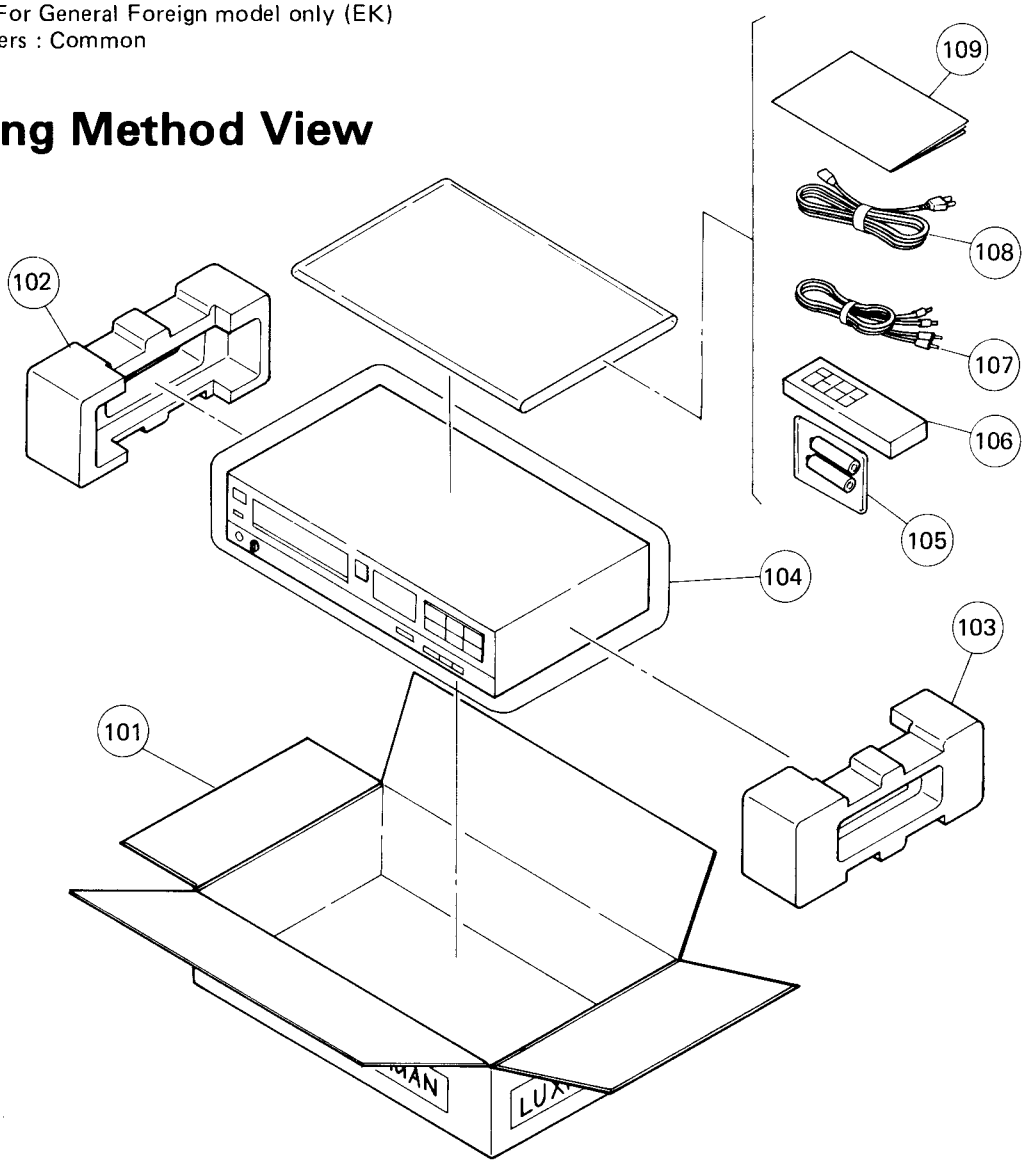
NOTE: The parts without part numbers are not supplied.

	Symbol No.	Part No.	Description
	101	22925580	Carton, Box
	102	22936373	Cushion, L
	103	22936374	Cushion, R
	104	22941302	Poly, Bag
	105	22101314	Battery, R6-E
	106	22120119	Remote Control (LUX)
	107	22164775	JNT; Cord/TSC
	108	22197012	Assembly, Cord Plug
●	109	68P81707F05	Owners Manual
▲	109	68P81707F03	Owners Manual
■	109	68P81707F02	Owners Manual

Symbol No.	Part No.	Description

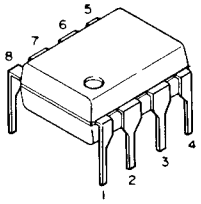
Note: ● : For North American model only (UC)
▲ : For Canadian model only (UQ)
■ : For General Foreign model only (EK)
Others : Common

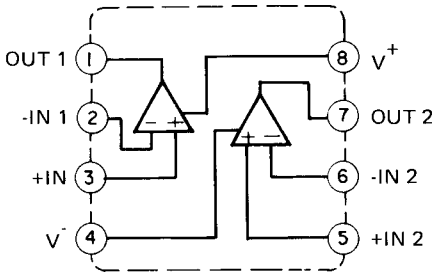
Packing Method View



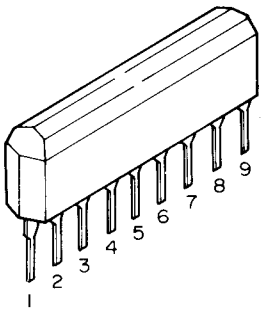
Semi-Conductor Lead Identifications

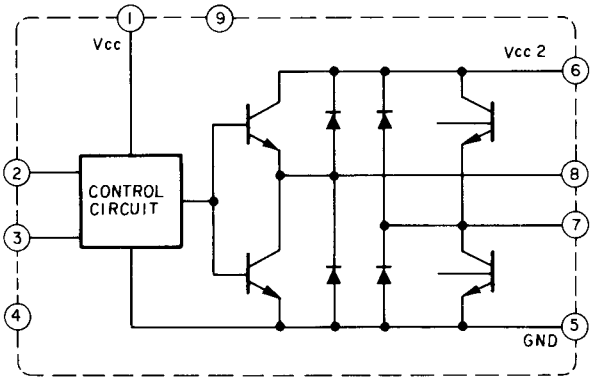
NJM2904D: Q102, 312



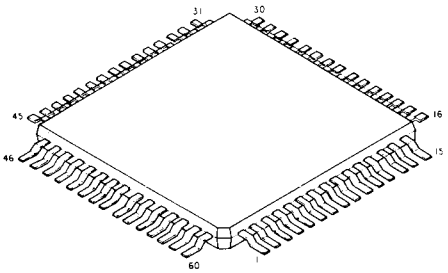


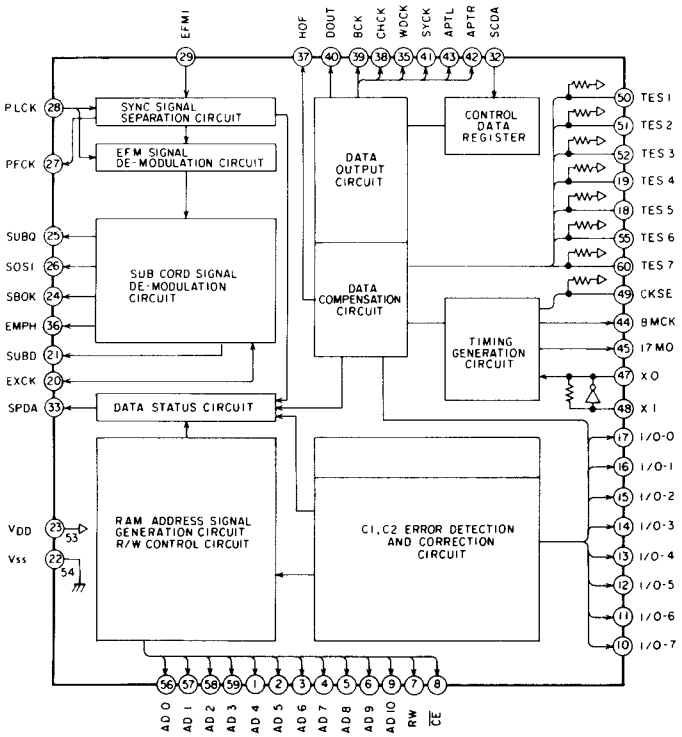
TA7354P: Q301



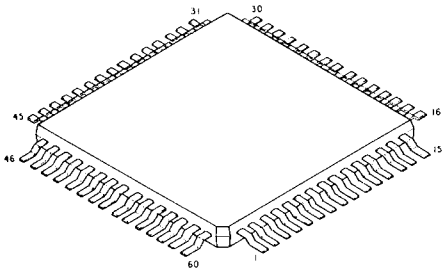


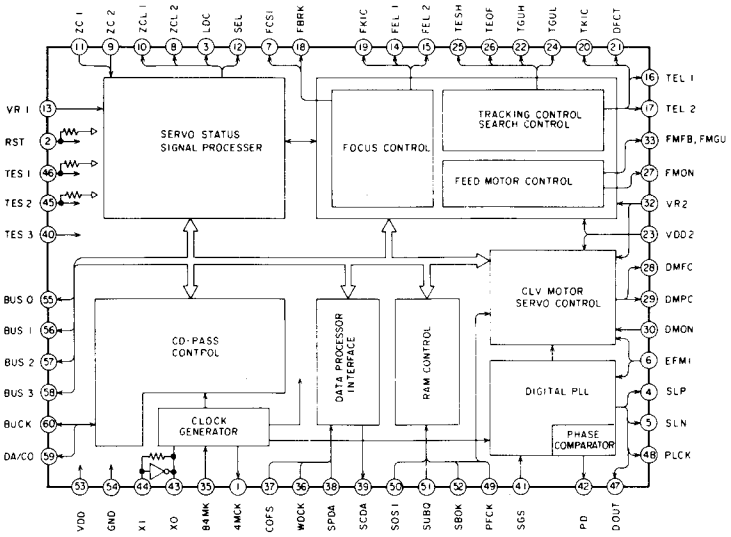
TC9200F: Q306



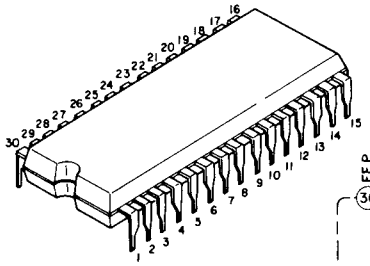


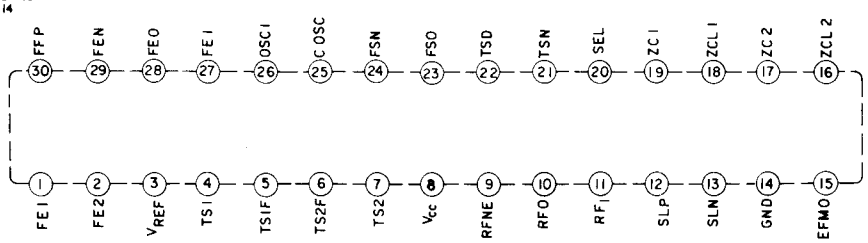
TC9201F: Q307



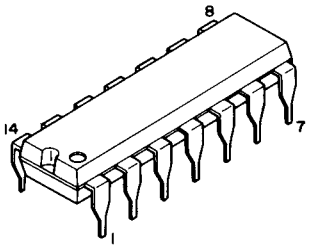


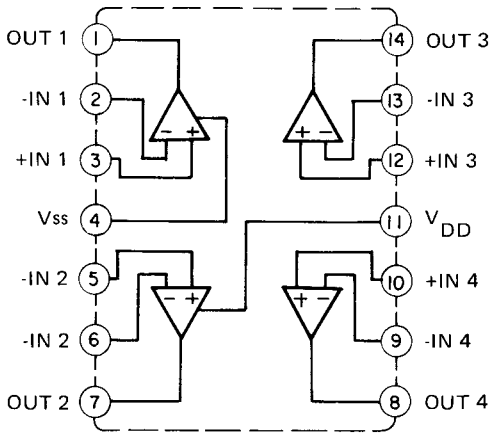
TA8101N: Q309



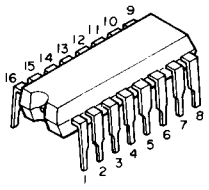


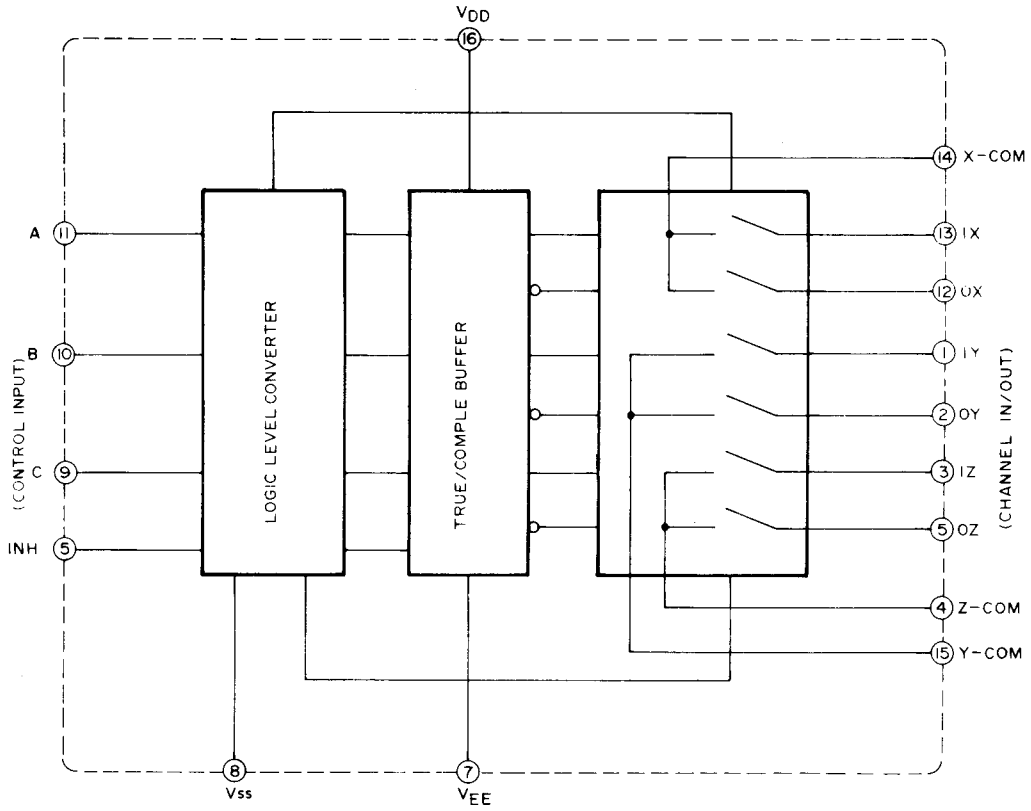
NJM3403AD: Q310



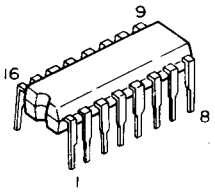


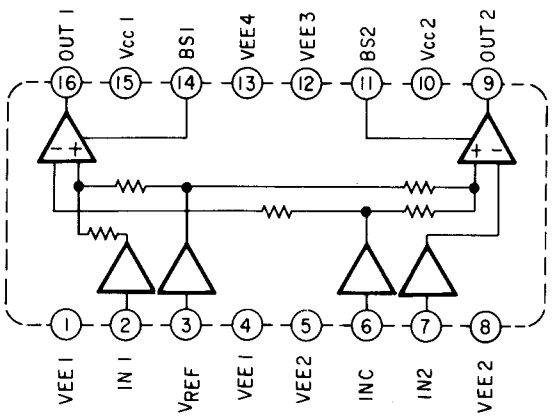
TC4053BP: Q313



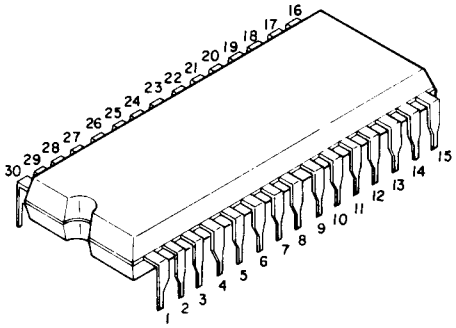


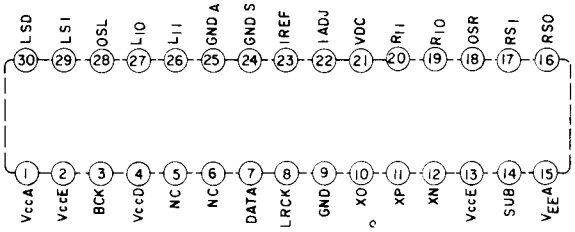
TA8102P: Q314, 315, 316, 317



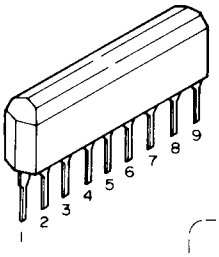


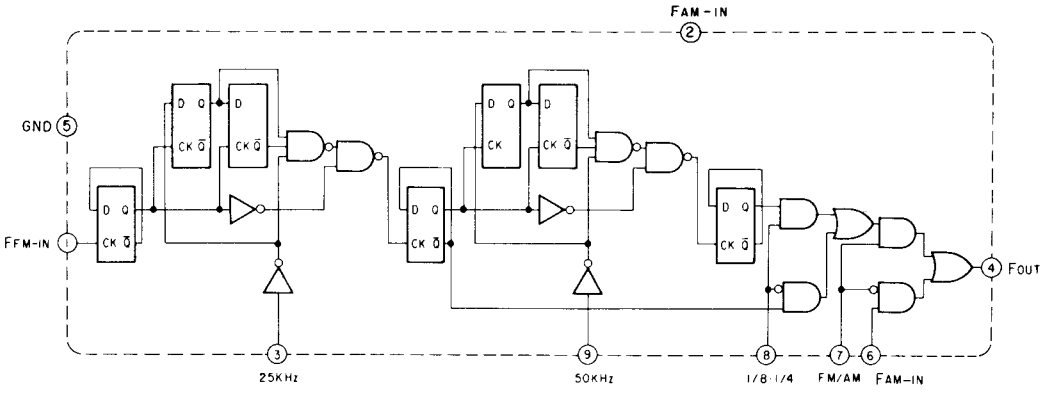
TD6709N: Q501



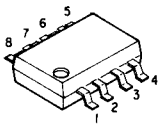

LSD LSI OSL LIO LII GND A GND S IREF IADJ VDC RII RIO OSR RSI RSO
30 29 28 27 26 25 24 23 22 21 20 19 18 17 16
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
VccA VccE BCK VccD NC NC DATA LRCK GND XO XP XN VccE SUB VEEA

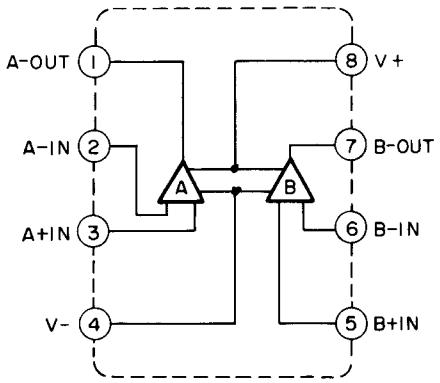
TD6102P: Q502



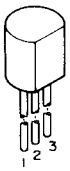


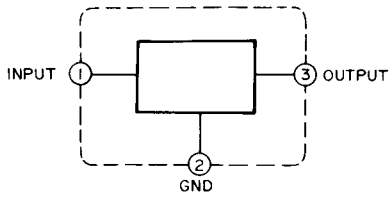
NJM4560DX: Q503



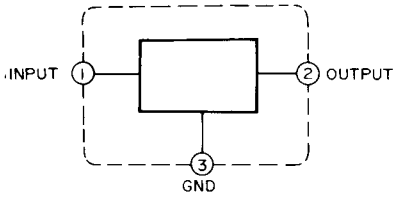


NJM79L08A: Q553

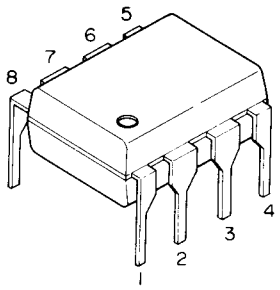


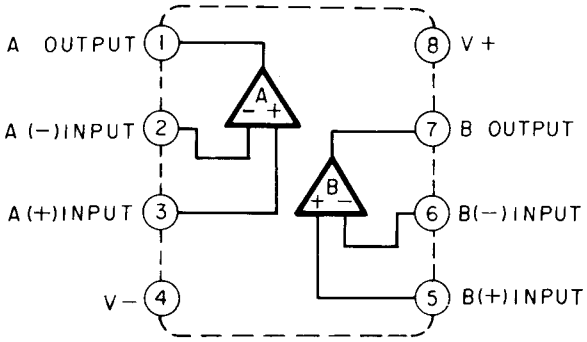


TA78L008AP: Q554

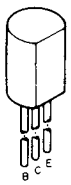


NJM4556S: Q701

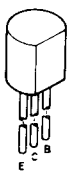




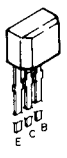
2SC2236: Q101
2SA966: Q906, 910



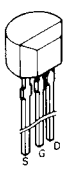
2SA1015: Q203, 601, 602, 603, 604
2SC2878: Q311, 507, 508, 902



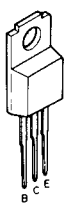
2SC2458: Q204, 302, 318
2SA1048: Q506, 901



2SK365: Q504, 505, 903, 905, 907, 909

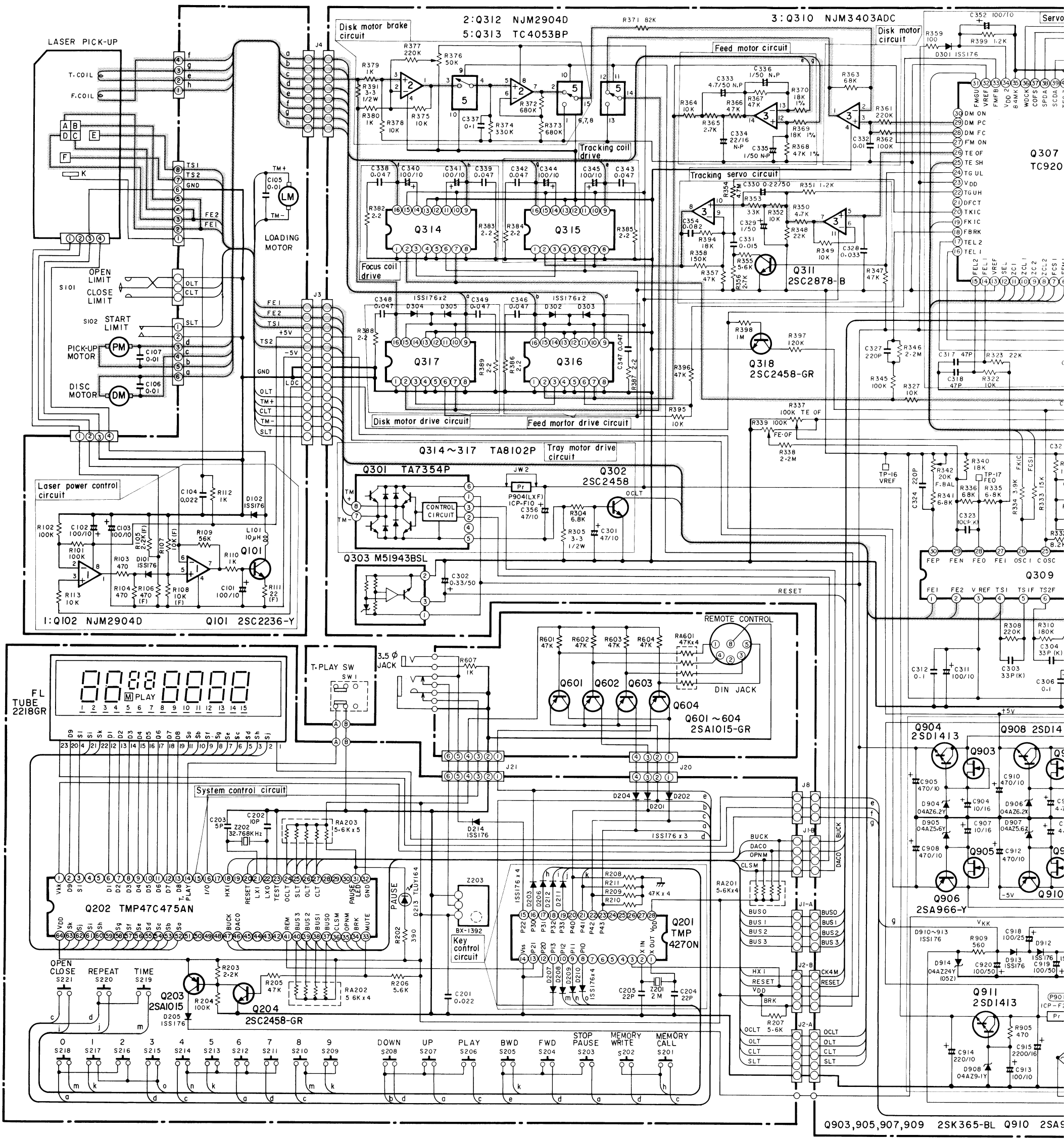


2SD1413: Q904, 908, 911



Schematic Diagram

IC	1:Q102 2:Q312 Q301 Q303 Q314 ~ Q317 5:Q313 3:Q310 Q307
Transistor(Q)	Q202 Q201 Q311 Q318 Q101 Q203 Q204 Q302 Q601 Q602 Q603 Q604 Q903 ~ Q911
Diode (D)	D101 D102 D304 D305 D302 D303 D301 D205 D213 D214 D203 D206 ~ D212 D204 D201 D202 D904 ~ D907 D914 D908 D909~



Q307 Q309 Q306 Q502 Q308 Q551 Q552 Q1

4 : Q503 1 : Q701

Q506 Q1

Q903 ~ Q911 Q902 Q901 Q504 Q505 Q507 Q508

D306 D1 ~ D4 D1

D904 ~ D907 D902 D903 D901 D915

D914 D908 D909 ~ D913

Servo control circuit

Digital signal processing

Q307 TC9201F

Q306 TC9200F

Q308 TC5518BFL-20(T)

Q502 TD6102P

D/A Convertor

Q501 TD6709N

Q55F,552 LP20C9B3AT

Q552

Q551

Servo signal generation circuit & EFM signal generation circuit

Q309 TA8101N

Q553 NJM79L08P

Q554 TA78L008AP

Q506 2SA1048

Q901 2SA1048

Q902 2SC2878-A

Q908 2SD1413

Q910

Q911 2SD1413

Mute signal circuit

Power circuit

Aperture compensation & emphasis circuit

Mute circuit

Mute circuit

Q503 NJM4560DX

Q504, 505 2SK365-BL

Q507, 508 2SC2878-B

Headphone circuit

I : Q701 NJM4556S

Wireless Remocon Unit

Q1 μPD1943G

Q1 2SC2673

D1 ~ D4 ISI555

D1 ISS176

D306 ISS176

D901 SS176

D902 ISS176

D915 ISS176

D903 S1VB10

D909 S1VB10

D912 ISS176

D913 ISS176

D910 ISS176

D911 ISS176

D906 04AZ6.2X

D907 04AZ5.6Z

D908 04AZ9.1Y

TP-17 FEO

TP-18 TSO

TP-19 FSO

TP-F25

TP-F20

P901 ICP-F25

P902 ICP-F25

P903 ICP-F20

S901 POWER SWITCH

P1 POWER CORD

T901 POWER TRANSFORMER

AC INLET 120V 0V 230V

HEADPHONE JACK J550

J1 Rch

J2 Lch

OUTPUT

J6

J7 GND Lch -5V +5V Rch

VR 50K x 2 BACK FRONT

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

D - 102